# DOCUMENT RESUME

ED 195 948 CS 005 760

| | |
|---|---|
| AUTHOR | Keyes, Paula J.; And Others |
| TITLE | Evaluation of the Right to Read Special Emphasis Project. Final Report. Volume I. |
| INSTITUTION | General Research Corp., McLean, Va. |
| SPONS AGENCY | Department of Education, Washington, D.C. |
| PUB DATE | Jul 80 |
| CONTRACT | 300-78-0067 |
| NOTE | 396p.; For related documents see CS 005 759-761. |
| EDRS PRICE | MF01/PC16 Plus Postage. |
| DESCRIPTORS | Elementary Education; Evaluation Criteria; Evaluation Methods; Low Achievement; *Program Evaluation; *Reading Difficulties; *Reading Instruction; *Reading Programs; *Reading Research |
| IDENTIFIERS | *Right to Read |

ABSTRACT

This is the first volume of a report describing the results of a three-year evaluation study of the Right to Read Special Emphasis Project, which was undertaken to determine if intensive programs of reading instruction introduced at an early age could change patterns of reading achievement in schools where large numbers of students read one or more grades below level. The four major sections of the report provide the following information: (1) a discussion of the background of the project and the evolution of the evaluation study, (2) an examination of the study design and methodology applied to the analysis of study data, (3) a description of the seven Special Emphasis Projects and a discussion of process findings, and (4) a discussion of findings for each of the seven project sites. Appendixes contain extensive tables of data derived from the study. (FL)

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Report 1055-02-80-CR

# Evaluation of the Right to Read Special Emphasis Project

FINAL REPORT

VOLUME I

July 1980

MANAGEMENT SYSTEMS DIVISION
**GENERAL RESEARCH CORPORATION**
A SUBSIDIARY OF FLOW GENERAL INC.
7655 Old Springhouse Road, McLean, Virginia 22102

Submitted To:

Ms. Ellen S. Balko
Department of Education (ED)
400 Maryland Avenue, S.W.
ROB No. 3, Room 5715
Washington, D.C. 20202

Contract No. 300-78-0067

CS885760

# ACKNOWLEDGMENTS

The Special Emphasis Project was a large undertaking, requiring the combined effort of hundreds of educators and the participation of some 10,000 children and their parents over the course of 3 years. This final report, compiled by the authors listed below, represents the cooperation and contributions of many persons concerned with improving the teaching of basic skills.

Special recognition is given to Mr. Edward Rattner, Office of Program Evaluation (OPE) of the US Department of Education (ED), project officer for the final 2 years of the Special Emphasis evaluation. His guidance, collegial support, and enthusiasm for the study greatly aided the work of the project evaluation team. Dr. Robert Maroney, Director of the Division of Occupational, Handicapped, and Developmental Programs of OPE, monitored progress and provided support and advice at critical points in the study. Dr. Maroney also provided continuity of supervision through the succession of three project officers. For his insights and comments regarding the content and presentation of data in the final report, the authors thank Dr. Eugene Tucker of OPE.

The evaluation team wishes to thank Ms. Shirley Jackson and Ms. Helen O'Leary of the Basic Skills Program, ED, for monitoring program implementation, facilitating contacts with the local projects, and offering their insights regarding the potential of the study.

Local education agency officials, project directors, principals, and school staff devoted countless hours to project implementation and evaluation-related tasks. Their special efforts to resolve problems in the data base as they arose are particularly appreciated.

Grateful acknowledgment is due to GRC staff who supported the evaluation activities. Mr. Robert Watt, Senior Vice President, provided initial support and encouragement to undertake the project as well as provided the ongoing resources necessary for a high quality product. Among the many GRC staff who contributed to the study, the authors wish to thank Mr. Donald Gunther and Ms. Clarita Bugler for administrative support, Mr. K. D. Midlam and Mr. David Moore for statistical and analytical advice, Dr. Alan Woodruff for reviewing and editing the draft version of the final report, Lisa Pickup for data reduction and programming, Lillie Stephenson for data collection and analysis, and Cindy Galanis who typed the report.

Special thanks are due to Americas Corporation staff, Mr. Grigor Fedan, Dr. Mary Cullinan, and Dr. Richard Chambers, for data collection and analytic insights. Recognition is given also to GRC's reading and research consultants, Dr. P. David Pearson and Dr. Victoria Chou Hare, for their contributions to the study design and approach to analysis; to Dr. Hare and Ms. Rosalie Rosetti for their assistance in data collection.

The assistance of all these persons is gratefully acknowledged; the responsibility for the final report, however, must rest with its authors.

Paula J. Keyes
Karen W. Parkin
Philip J. Silvers

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# SECTION 1

# INTRODUCTION

This report describes the results of the 3-year evaluation study of the seven Special Emphasis projects funded by the US Office of Education (USOE).

## STUDY OBJECTIVE

General Research Corporation (GRC) contracted to conduct a process and impact evaluation of the Special Emphasis Project for the Office of Evaluation and Dissemination (OED) of the USOE.

The purposes of the process evaluation were to examine the degree to which each Special Emphasis project adhered to USOE project guidelines, to determine the comparability of students in the Special Emphasis and comparison schools, and to describe the characteristics of each Special Emphasis instructional program.

The purpose of the impact evaluation was to determine the impact of the Special Emphasis Program on reading performance of students in the project schools as contrasted with reading performance of students in the comparison schools, to investigate changes in reading-related attitudes and behaviors, and to document the residual effects of each Special Emphasis Program.

## SUMMARY OF STUDY CONCLUSIONS

The working hypothesis of the Special Emphasis Project was that intensive programs of reading instruction introduced at an early age would effect significant improvement in patterns of reading achievement in schools having large numbers of low achieving students. The data collected and analyzed from the seven project sites for this evaluation study reveal that Special Emphasis sites themselves can be classified according to the degree to which they implemented the Special Emphasis concept and program. Of the three sites with the highest implementation ratings (Louisiana, Tennessee, and Texas), two showed evidence of impact favoring Special Emphasis student groups. The data suggest that program implementation had a determining influence on program success and consequently on student performance. Of the sites achieving lower implementation ratings (Michigan, Ohio, West Virginia, and California), significant differences between Special Emphasis and comparison student groups were scattered between the two student groups. Because it is questionable that Special Emphasis was in fact operationalized at these four sites, the few instances of impact favoring Special Emphasis groups cannot be construed as evidence of program success.

Highly operationalized Special Emphasis programs had two program features in common. Reading specialists worked in the classroom teaming with the regular classroom teacher and inservice training programs attempted to integrate and reinforce a diagnostic-prescriptive approach to reading instruction.

Sites which exhibited the greatest degree of carry over of Special Emphasis concepts and practices when Federal project funds terminated were those with the highest implementation ratings. The greatest degree of carry over was experienced at the classroom level. Key factors associated with the integration or adaptation of Special Emphasis program features at individual project sites were: an interest and prominent role by the local education agency in the project, recognition of Special Emphasis as a unique intervention effort, and a sense of accomplishment and involvement on the part of teachers and reading specialists in the project.

## ORGANIZATION OF THE REPORT

This report contains:

- A discussion of the background of the Special Emphasis Project and the evolution of this evaluation study. (Section 2)
- An examination of the study design and methodology applied to the analysis of study data. (Section 3)

- A description of the seven Special Emphasis projects and discussion of process findings. (Section 4)
- A discussion of impact findings for each of the seven project sites. (Section 5)

Volume II of this report contains a description of the standardized reading test used in the evaluation, correspondence to project sites regarding data collection activities and requirements, and study instruments.

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# SECTION 2

# BACKGROUND

## THE SPECIAL EMPHASIS PROJECT

The Right to Read Special Emphasis Project was initiated under the provisions of Public Law 94-380, Section 721, as amended by Public Law 94-194, Section 10. This legislation authorized the USOE to undertake a study to test the hypothesis that intensive programs of reading instruction introduced at an early age can change the patterns of reading achievement of students in schools having large numbers of students reading one or more grades below level. Unlike many educational interventions intended to be remedial programs, e.g., Title I of the Elementary and Secondary Education Act, Special Emphasis was to have a preventive focus. In this respect, Special Emphasis was to take a diagnostic-prescriptive approach to reading instruction with all students in grades 1 and 2 and provide remedial attention to students in grades 3 through 6 who were reading below level.

The major provision of the authorizing legislation called for the implementation and evaluation of Special Emphasis projects which provided for:

- The teaching of reading by reading specialists for all children in grades 1 and 2.
- The teaching of reading by reading specialists for elementary school children in grades 3 through 6, who have reading problems.
- An intensive vacation reading program for elementary school children who are reading below the appropriate grade level or who are experiencing problems in learning to read.

For purposes of the Special Emphasis program, the terms "reading specialist," and "reading teacher" were defined in the Title VII legislation as:

- "Reading Specialist" means an individual who has a master's degree, with a major or specialty in reading from an accredited institution of higher education and has successfully completed 3 years of teaching experience which includes reading instruction.

- "Reading Teacher" means an individual, with a bachelor's degree who has successfully completed a minimum of 12 credit hours, or its equivalent, in courses of teaching reading at an accredited institution of higher education and has successfully completed 2 years of teaching experience which includes reading instruction.

In addition to the major program features identified above, the authorizing legislation listed 14 specific features to be included in the Special Emphasis Project funded by the Office of Education (OE). These 14 features were:

- Diagnostic testing designated to identify pre-elementary and elementary school children with reading deficiencies, including the identification of conditions which, without appropriate other treatment, can be expected to impede or prevent children from learning to read.

- Planning for and establishing a comprehensive reading program.

- Reading instruction for elementary school pupils whose reading achievement is less than that which would normally be expected for pupils of comparable ages and in comparable grades of school.

- Preservice training programs for teaching personnel including teacher-aides and other ancillary educational personnel, and inservice training and development programs, where feasible, designed to enable such personnel to improve their ability to teach students to read to the extent practicable.

- Participation of the school faculty, school board members, administration, parents, and students in reading-related activities which stimulate an interest in reading and are conducive to the improvement of reading skills.

- Parent participation in development and implementation of the program for which assistance is sought.

- Local educational agency school board participation in the development of programs.

- Periodic testing in programs for elementary school children on a sufficiently frequent basis to measure accurately reading achievement; for programs for pre-elementary school children, a test of reading proficiency at the conclusion, minimally, of the first-grade program into which the nursery and kindergarten programs are integrated.

- Publication of test results on reading achievement by grade level and, where appropriate, by school, without identification of achievement of individual children.

- Availability of test results on reading achievement on an individual basis to parents or guardians of any child being so tested.

- Participation on an equitable basis by children enrolled in non-profit private elementary schools in the area to be served (after consultation with the appropriate private school officials) to an extent consistent with the number of such children whose educational needs are of the kind the program is intended to meet.

- The use of bilingual educational methods and techniques to the extent consistent with the number of elementary school-age children in the area served by a reading program who are of limited English-speaking ability.

- Appropriate involvement of leaders of the cultural and educational resources of the areas to be served, including institutions of higher education, non-profit private schools, public and private non-profit agencies such as libraries, museums, educational radio and television, and other cultural and education resources of the community (to the extent practicable).

- Assessment, evaluation, and collection of information on individual children by teachers during each year of the pre-elementary program, to be made available for teachers in the subsequent year, in order that continuity for the individual child not be lost.

The USOE further specified the purposes and objectives of the Special Emphasis Program in its definition of terms and the provisions to be used in identifying the specific student populations the program was intended to serve. The most important of these definitions were:

- Reading deficiencies--Reading achievement which is less than that normally expected for children of comparable grades of school. For children in grades 2 through 8, reading deficiency is defined as reading ability 1 or more years below appropriate grade level as estimated by standardized tests and/or informal testing.

- Reading problems--Reading achievement which is less than would normally be expected for children of comparable ages in comparable grades.

- High percentage of children with reading deficiencies--Fifty percent or more of the students in grades 2 through 8 reading 1 or more years below appropriate grade level.

- Intensive reading instruction--Instruction in reading that would provide pupils with a minimum of 20 to 30 minutes of direct teacher-pupil interaction each day and 15 to 20 minutes per day of independent reinforcement activities. A total of 40 minutes of reading instruction per day was stipulated.

In planning for the implementation of the Special Emphasis Project, the USOE planned a controlled experiment in which each school in which the Special Emphasis "treatment" was to be implemented would be matched with a "comparison" school which was similar with respect to:

- Instructional approaches
- Curriculum materials
- Size of enrollment
- Student characteristics (socioeconomic status, ethnicity, and average scores on standardized tests)

The provisions of the legislation required that each applicant for a Special Emphasis Program grant provide assurance that:

- Appropriate measures have been taken by the agency to analyze the reasons why elementary school children are not reading at the appropriate grade level.

- The agency will develop a plan setting forth specific objectives which shall include the goals of having the children in project schools reading at the appropriate grade level at the end of grade three.
- Whenever appropriate, sufficient measures will be taken to coordinate each pre-elementary reading program with the reading program of the educational agencies of institutions which such pre-elementary school children will be next in attendance.

Further, the USOE regulations specified that local education agencies (LEAs) participating in the Special Emphasis Project would be required to assure that:

- All first and second graders would receive intensive reading instruction.
- All students in grades 3 through 6 who have reading problems would be given intensive instruction in reading.
- An intensive summer program would be available for the project school students who are performing below grade level, and this service not be available to the comparison school children.
- Instructional plans would be formulated through consultations with many parties, including the district administration, parents, and faculty of the project school, and that this plan would include a diagnostic-prescriptive approach and be part of a comprehensive reading program in the project school.
- Cooperation be extended with an external evaluation to be conducted by the Commissioner or his/her contractor.

Fifty applications for Special Emphasis Project funding were received by the USOE. These applications were evaluated by the criteria stipulated in Section 162.41 of the regulations (see Table 2.1). In the initial screening process, 30 applications were found to be technically ineligible. From the remaining 20 applications, 8 were selected.

## TABLE 2.1

## CRITERIA FOR EVALUATING SPECIAL EMPHASIS PROJECT APPLICATIONS

Section 162.41: In reviewing applications under this subject, the Commissioner will seek to identify a small number of high quality projects and will apply the following criteria and point system totalling 175 points:

- (a) The soundness of the proposed plan of operation, including consideration of the extent to which:
  - (1) The objectives of the project are sharply defined, clearly stated, and capable of being measured and evaluated (20 points); and
  - (2) Provision is made for inservice training appropriate to the needs of the project (10 points);
- (b) The overall quality of the instructional design including:
  - (1) The extent the project plans promise an effective instructional climate (15 points);
  - (2) The quality and comprehensiveness of plans for improving the whole school reading program (15 points);
  - (3) The extent plans for the summer school are integrated with the overall school reading program (10 points);
  - (4) The adequacy of the diagnostic program to identify students with reading problems and needs (10 points); and
  - (5) The extent the project will utilize recent research fundings and provide for the adoption of innovative products and practices (10 points);
- (c) Provision is made for the sole use of reading specialists or reading teachers, rather than regular classroom teachers, under the conditions set out in 162.39(b) (50 points);
- (d) The qualifications of the project director (15 points);
- (e) The reasonableness of cost in relation to anticipated results (10 points); and
- (f) The quality of the proposed management design that includes process evaluation, schedules, and resource utilization plans (10 points).

Each of the eight projects funded for the first year of the project—1976-77--received between $100,000 and $200,000 per year, an amount approximately twice the amount expended (on a per-pupil basis) under Title I of the Elementary and Secondary Education Act.

The first year of the Special Emphasis Project was marked by late startups, ongoing program adjustments, and a working out of relationships between reading specialists and classroom teachers. The second year of the study, school year 1977-78, was characterized by more "normalized" operations. Staff relationships were established and signs of integration of Special Emphasis into the ongoing system began to appear.

During the second project year, six of the original sites were refunded. These sites were located in Louisiana, Michigan, Ohio, Tennessee, Texas, and West Virginia. An additional site, located in California, was added to the project, giving a new total of seven projects for the 1977-78 school year. The Ohio project had to be dropped from the evaluation following the 1977-78 school year because of large-scale court-ordered shifting of students involved in the study.

## THE EVALUATION OF SPECIAL EMPHASIS

Concurrent with the funding of the Special Emphasis projects, the USOE contracted for the evaluation of the project with an outside contractor. The contractor/evaluator for this project was to conduct both a process and an impact evaluation of the Special Emphasis Project.

The evaluation contract for the first phase of the Special Emphasis Project was awarded to Applied Management Sciences, Inc. (AMS). During the first 18 months of this evaluation, AMS completed the following major activities:

- Development of the initial study design.
- Development of the data collection instruments and selection of the reading test to be used as the instrument for assessing reading achievement.

- Supervision of the testing of students in the fall of 1976 and the spring and fall of 1977.
- Data collection in spring, summer, and fall of 1977.
- Preparation of the first annual Special Emphasis Project report including: background on the development of Special Emphasis; a description of the methodology; site profiles; and analysis of variance for student gains, using pre- and postmeasures and a Special Emphasis-comparison school model.

The first year of the evaluation of the Special Emphasis Project was hampered by several factors which affected subsequent project implementation and, ultimately, had an important effect on the evaluation of the impact of the Special Emphasis Projects. Among these problems were:

- Project grants were not awarded until several months into the 1976-77 school year. This delay caused difficulties in program implementation and resulted in the loss of valuable instruction time for Special Emphasis.
- The local education agencies were occupied most of the first year with the process of implementing project requirements. In addition to the normal "shakedown cruise" associated with new programs, some sites experienced intra-staff tensions owing to the required introduction of reading specialists into the daily routine of the classroom teachers.
- The original study design contained no provisions for including student demographic or treatment data in the impact analysis.
- The fall 1976 data could not be identified by individual students. Therefore, pre- and postmeasures could not be matched on a student-by-student basis, and the analysis had to be limited to grade level aggregation.

- Staff from some comparison schools felt that they were being imposed upon by the data collection efforts without due consideration for their role. This perceived lack of consideration contributed to a lack of cooperation and, therefore, lack of uniformity in the data collection process.

In April 1978, GRC was awarded the contract for the continuation of the Special Emphasis evaluation project. Under this contract, GRC:

- Augmented the site profiles developed by AMS through the collection of data on the demographic characteristics of students and measures of intensity of instruction.
- Conducted data collection at local sites in the spring, summer, and fall of 1978 and 1979, using instruments designed by AMS as supplemented by data collection forms designed by GRC.
- Developed standardized written instructions and procedures for the administration of the Stanford Diagnostic Reading Test (SDRT) and the completion of the data collection instruments.
- Supervised testing in the spring and fall of 1978 and 1979.
- Created a longitudinal data base by merging the data collected in 1978 and 1979 with the data collected in 1977 by AMS.
- Conducted data analysis for the second annual report and the final report of the Special Emphasis Project.

GRC was assisted in this project by Americas Corporation, its subcontractor, which participated in data collection activities at four sites.

The evaluation design and methodology applied to the collection and processing of study data is described in the next section.

## SECTION 3

## EVALUATION DESIGN AND METHODOLOGY

### OVERVIEW

The purpose of the Special Emphasis Evaluation was to examine the process of delivering the Special Emphasis Program and to determine the impact of the Program on participants. This required the design of a study with process and impact components.

The objectives of the two study components are listed below.

### Process Evaluation

- Examine the degree to which the project sites adhered to the Special Emphasis Project guidelines--inclusive of those specified in the authorizing legislation and those established by the USOE.
- Determine the comparability of schools and students in Special Emphasis and comparison schools.
- Describe the characteristics of the Special Emphasis school year instructional programs and the summer reading programs.

The process evaluation of the Special Emphasis Project was based on data and information collected from classroom observations, questionnaires, and interviews. Data and information used in the process analysis included both instructional programmatic data and data on student and staff characteristics.

### Impact Evaluation

- Determine the impact on reading performance of students in the Special Emphasis and comparison schools during each school year and over the length of the study.
- Determine differences in the retention of reading skills between schools with and without summer reading programs.

- Determine the impact of the Special Emphasis Program on reading-related attitudes and behaviors of school staff, students, and parents.
- Document the residual effects of the Special Emphasis Project within each participating school district and on project participants.

The impact evaluation of the Special Emphasis Project was designed as a longitudinal, controlled experiment in which differences in reading performance of students who participated in the Program was compared to reading performance of a similar group of students who did not participate.

## DESIGN CONSIDERATIONS AND LIMITATIONS

Social science researchers have long recognized the difficulty of conducting a true controlled experiment in the real world. The problem of conducting such an experiment over an extended period of time--especially in multiple schools--is, in many ways, the most complicated of all longitudinal, controlled experiments. The general problems of conducting such studies are well documented in the literature, were well recognized by USOE at the time this evaluation study was planned, and were understood by the contractor in the design of the study and the development of the data analysis plan.

The experience gained in the conduct of the Special Emphasis Project evaluation does, however, offer some important insights into the methodological problems of conducting evaluations of longitudinal, multi-site experiments in educational settings.

The major constraints and complications encountered in the conduct of this study may be summarized under three general topics:

- The design and implementation of Special Emphasis.

- Study instrumentation.
- Implementation of the data collection.

## The Design and Implementation of Special Emphasis

The Special Emphasis Program was initially developed as a quasi-experimental design. While intended to be a "treatment-comparison" group study, neither the USOE nor the evaluation contractor had the authority to exercise control over any of the several major variables crucial to the conduct of a controlled experiment.

With respect to the legislative specifications and the guidelines which were developed, all Special Emphasis sites appeared to be in compliance regarding:

- Hiring of additional staff--reading specialists/teachers and teacher aides.
- Use of reading specialists/teachers who met USOE guidelines.
- Use of a diagnostic-prescriptive approach to reading instruction.
- Provision of summer reading programs.

There was, however, a wide disparity between sites regarding compliance with other USOE guidelines. In several instances, these deviations from USOE guidelines resulted in the introduction of conditions which violated basic tenets of experimental research.

Table 3.1 identifies some of the most significant factors over which there was not complete control. (In fact, at the time the Special Emphasis Project contracts were awarded, all recipient districts were out of compliance with the requirements of the law and the USOE regulations on at least one major issue.)

While some of these variables might have been controlled by the application of alternative procedures in the selection of treatment

## TABLE 3.1

## SUMMARY OF CONDITIONS AND FACTORS WHICH IMPEDED THE TREATMENT-COMPARISON GROUP DESIGN

The nature and extent of the Special Emphasis "treatment" were only generally defined, allowing programmatic latitude in the design of the individual projects. Participating districts were permitted to adopt their own instructional strategies--a provision which severely restricted cross-site comparisons.

Reading specialists and special reading programs which existed in the comparison schools at the time Special Emphasis projects were initiated were allowed to remain while they could be removed from the treatment schools--a provision which confounded the experiment and severely restricted comparisons both within sites and across sites.

Participating districts could not be restricted from introducing new, or expanding existing, related reading programs, such as those funded under the provisions of Title I, in the comparison school.

Participating districts could not be restricted from adding staff, aides, volunteers, etc., in areas other than reading, in the comparison school; this altered the overall teacher/student ratio.

Major differences existed in the Special Emphasis and comparison schools with respect to size, ethnicity, teaching methods, and pretest scores. In some instances, comparison schools offered more intensive reading instruction than the Special Emphasis schools.

Criteria for selecting students for participation in the Special Emphasis Program varied across sites.

Special Emphasis Project standardized reading tests were administered at the treatment and comparison schools at approximately the same time as their own reading achievement testing program thus introducing the possible confounding variables of the "practice effect" and/or "over testing."

and comparison schools, some of the conditions which characterized--or differentiated between--the treatment and comparison schools were altered during the course of this longitudinal study by actions of the participating local education agencies.

An advance awareness of all the treatment-comparison school characteristics and variants might enable a contractor to design a research plan which would control for some of the most important confounding variables. However, it is most probable that an experiment of a larger scale than the Special Emphasis Project would have been required to obtain definitive evaluation results.

Problems resulting from factors such as those listed in Table 3.1 could, in future studies, be overcome and/or compensated for by:

- Providing greater specification as to the treatment to be provided and the means by which such treatment is provided. Such a provision would at least ensure programmatic consistency and would, in this case, have allowed for an evaluation of the Special Emphasis Project as a whole rather than limiting the evaluation to independent evaluation of individual project sites.
- Limiting the changes which could be made in the educational programs of the participating schools during the period of the experiment. Such a provision would reduce the number of confounding variables introduced and enhance the degree to which findings of significance can be attributed to the experimental treatment variable.
- Increase the size of the experiment to provide a data base of sufficient size for the influence of potentially confounding variables to be factored out in the process of data analysis.

The measurement of program impact for the summer Special Emphasis program as originally designed, presented analytical problems which could not be overcome. The original evaluation study contractor did not provide for the identification of matched treatment-comparison groups. With the concurrence of the project officer, the investigation of summer program impact on reading retention was aborted. The issues which led to this decision are presented later in this section.

## Study Instrumentation

Two major types of data were required to perform the process and impact evaluations required in this study:

- Data and information about the teachers and the student populations in the participating schools and educational practices employed in these schools.
- Data to be used in assessing the impact of the Special Emphasis Projects on the students and schools where these projects were implemented.

In several cases, a single instrument was used to collect data for both of these purposes. Instruments used in this study, and the evaluation component for which data in each instrument was used, are summarized in Table 3.2.

(Copies of all instruments used in this study are contained in Volume II of this report.)

Several problems were associated with the evaluation instrumentation used in this study. Specifically, the analysis of study data was constrained by:

- The reading test selected to measure achievement.
- The omission of data elements important for analysis, e.g., student demographic data.

TABLE 3.2

STUDY INSTRUMENTS AND USE(S)

| Instrument | Use of Data | |
|---|---|---|
| | Process Study | Impact Study |
| 1. The Stanford Diagnostic Reading Test (SDRT) | | X |
| 2. The Classification of Teaching Practices | X | X |
| 3. Project Director Questionnaire | X | |
| 4. Experimental School Principal Questionnaire | X | X |
| 5. Comparison School Principal Questionnaire | X | X |
| 6. Reading Specialist Questionnaire | X | |
| 7. Experimental School Classroom Teacher Questionnaire | X | X |
| 8. Comparison School Classroom Teacher Questionnaire | X | X |
| 9. Librarian Questionnaire | X | |
| 10. Student (Grade 3) and Student (Grades 4-6) Questionnaires | | X |
| 11. Parent Questionnaire | | X |
| 12. Student Information Checklist | X | |
| 13. Classroom Observation Protocol | X | |

The Stanford Diagnostic Reading Test (SDRT) was selected by the original evaluation contractor because (1) it provided a diagnostic instrument which could be utilized in the Special Emphasis Program; (2) it was designed to be particularly sensitive to the skill domain performance of below average reading achievers; (3) it facilitated tracking of student progress through all elementary grades, because its multiple levels yielded comparable scores across all grades; and (4) as a recently revised test, teachers in the experiment would not likely be inclined to "teach to the test." These features notwithstanding, a number of characteristics of the SDRT clearly rendered the test inappropriate for purposes of this study:

- As stated in the test manual, the SDRT is intended primarily as a diagnostic test; it is not designed for use as an achievement test.

- As a diagnostic test, the SDRT is designed for use in the identification of the reading problems of low achievers. Accordingly, it yields a highly skewed negative distribution and does not discriminate well at the high end of the scale. Thus, the SDRT's ability to measure achievement and detect differences in performance between Special Emphasis and comparison cohorts where either groups' mean raw scores were above the 70% level was limited.[1]
- As a diagnostic test, the SDRT was intended for administration in the fall of the school year and is normed on the class level for use in placement. While the publishers have provided norming information for individual students for spring testing, the fact that the test is even easier for students in the spring further exacerbates the ceiling effect problem discussed in Volume II and documented in Appendix C.
- Because the SDRT was not normally used by school systems both teachers and students were aware that they were participating in an evaluation project, whether they were receiving Special Emphasis or not.

The use of the SDRT as the evaluation instrument for this study is further complicated by the general provisions of the Special Emphasis Project. Specifically, while treatment schools were required to provide Special Emphasis reading instruction to all first and second graders, Special Emphasis reading instruction for students beyond second grade was mandated only for those students reading one or more grades below level as measured by whatever reading achievement test was normally used by the participating schools. There is, however, no basis for assuming that performance levels measured by the SDRT corresponded to achievement levels on tests used by the participating schools to identify students for Special Emphasis instruction beyond grade 2 in the individual schools where this experiment was conducted. Thus, the results of this study may be biased by program assignments made on the basis of the results of tests used by participating schools.

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[1] The 70% level as a point of potential ceiling effects was suggested by one of the test authors, Dr. Bjorn Karlsen.

A second data limitation relates to the adequacy of data necessary for the analysis of program impact. The data collection instruments used in the first year data collection by the original study contractor contained no provisions for the collection of demographic information on students in the Special Emphasis and comparison schools. The study instruments used in the first year's data collection also made no provision for identifying those students in grades 3 through 6 who had received Special Emphasis.

These limitations were corrected by means of the Student Information Checklist designed by GRC and used in the collection of data for school years 1977-78 and 1978-79. An examination of data secured from the spring 1978 Student Information Checklist gave evidence, however, that reliable student-by-student participation data could not always be provided by classroom teachers. Procedures for the collection of these data were subsequently revised, but it was not until the 1978-79 project year that these data were collected with acceptable reliability. As a result, the ability to analyze program impact by isolating the treatment variables by student was impossible for all but the final year.

## Implementation of the Data Collection

The research plan for the evaluation of the Special Emphasis Project called for the collection of data which could be used to identify test scores by student, grade, class, school, and project site. To preserve student anonymity, the initial study contractor developed a 10-digit identification code--4 digits of which were used to identify individual students--to be used on all test forms and student questionnaires. This coding system, explained in a brief letter from the contractor, was sent out prior to the initial data collection in fall 1976.

Several months after GRC assumed responsibility for this study, data tapes from 1976 and 1977 were obtained. In the course of examining these tapes, it was found that a significant number of the test forms did not contain a full 4-digit code to identify students and that, in numerous instances, more than one student had been assigned the same identification number. These errors in coding and verification prevented data from the fall 1976 data collection from being linked, by student, to the spring 1977 data. As a result, it was necessary to eliminate from the analysis the data collected during the first round of testing.

The limitations in the data collection procedures revealed by the analysis of the initial contractor's data tapes were generally overcome by the implementation of more stringent coding and quality control procedures in the second and third years of this study.

Having identified these coding errors, GRC established a procedure for correcting these codes and improving the capability to link student test scores over time. During spring 1979, each project site was given a complete testing history for each student through fall 1978 and asked to verify the accuracy of the birthdate and sex associated with the 4-digit ID code. As a result, many errors were resolved, preserving as much data as possible for the analysis.

It should be noted that the corrections that were made relate only to errors which could be identified through the application of basic editing and consistency checks. Not all the errors which might have existed in the identification numbers could be identified using the procedures employed in this analysis. The diligence of the respective Special Emphasis staffs notwithstanding, one should not assume that this process has produced 100% accuracy, given the limited control which GRC had over the data verification and the correction process.

For the study results to be as representative as possible of Special Emphasis participants, it was necessary to collect both pretest and posttest SDRT scores for as many participants as possible. The extent to which this objective was met was limited by sample attrition due to:

- High student mobility at some project sites.
- Absenteeism on testing dates.
- Errors in coding SDRT answer booklets.

The SDRT test history for each site contained in Appendix A provides the data necessary to calculate sample attrition.

A complete discussion of data collection procedures is contained in Volume II.

## DATA ANALYSIS STRATEGIES

The analysis plan developed by GRC expanded and enhanced the plan initially developed by the previous evaluation contractor. The analysis activities paralleled the two study components--process and impact.

### Process Analysis

The process analysis is primarily descriptive. The first step was to compare the aggregate characteristics of the Special Emphasis and comparison schools at each site. Among the characteristics considered were:

- Student enrollment
- Racial/ethnic mix of student body
- Sex designation of students
- Percent of students receiving free or reduced-price lunch

The purpose of this comparison was twofold: to assess the adherence of each Special Emphasis project to the implementation guidelines concerning comparison schools and to evaluate the degree of confidence to be placed on the assumption of effective "randomness" for the impact analysis.

The second step in the process analysis was to provide a description of the teaching techniques, resources, and the intensity of instruction for both the Special Emphasis and the comparison schools. Data from the teacher questionnaires, the Classification of Teacher Practices instrument, the Student Information Checklist, and the Observation Protocols were used to profile each of the schools within the seven Special Emphasis projects.

These data were helpful in assessing adherence to Special Emphasis guidelines. They also contributed to the interpretation of impact results through recognition of the environmental and treatment factors that influence the study outcomes.

### Impact Analysis

The primary purpose of the impact analysis is to assess the reading performance of students who participated in Special Emphasis in relation to similar students who did not participate. In addition, GRC investigated the possibility of other project outcomes such as changes in reading-related attitudes and behaviors and residual effects of Special Emphasis. The SDRT questionnaire, and interview data were utilized in this investigation. GRC anticipated assessment of impact for:

- Project years 1977-78 and 1978-79
- The full length of the project, 1977-79.[1]
- Each of the summers 1977, 1978, and 1979, for which the Special Emphasis summer program were in operation.

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[1] As we noted earlier, the test data from fall 1976 were excluded from the analysis because of major coding problems and sample attrition.

4

The measure used to assess reading performance was the comprehension total score on the SDRT. The comprehension total score is a composite score derived from two subtests. A description of the various subtests for each test level of the SDRT is provided in Volume II. The comprehension total was chosen since it is common to all test levels administered and was believed to provide an approximate measure of achievement rather than diagnosis.

## Project Year Analysis

The project year analyses cover the period from the spring testing of the previous year to the spring testing of the project year under study. A multidimensional approach was utilized to examine impact in terms of statistical significance and, more importantly, in terms of educational significance.

With the concurrence of USOE, the project team decided to:

- Consider each project site as a separate evaluation.
- Examine reading performance for each grade separately.

The analysis of students aggregated by grade, by site was accomplished through use of Analysis of Covariance (ANCOVA). Because of the presumed presence of measurement error in the observed test scores, a comparison of the mean observed change between the Special Emphasis and comparison cohorts could give a distorted view of the true condition.[1] Therefore, the dependent variable used was the students' scaled scores on comprehension total for the spring of the project year under study. The independent variable was the treatment given, either Special Emphasis or comparison. The covariate used to statistically adjust the dependent variable was the pretest comprehension total scaled score.

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[1] F. M. Lord. "Elementary Models for Measuring Change," Problems in Measuring Change, C. W. Harris (ed.), Madison: University of Wisconsin Press, 1967, p. 21-38.

ANCOVA permits analysis of groups that are not equal with respect to the covariate(s) as though they were equal. However, there are several assumptions that must be satisfied to product statistically valid results. In particular, the assumption that each Special Emphasis group and its corresponding comparison group are drawn from a single population and any initial differences can be considered as random error require examination.

This assumption was met to varying degrees at each of the seven project sites. Therefore, ANCOVA was more appropriate for some sites and grades than for others. An additional influence on performance may relate to demographic differences between corresponding groups. Therefore, GRC also performed ANCOVAs using composite variables which included demographic variables and the pretest as covariates. These analyses did not, however, shed any additional light on the significance of the impact of Special Emphasis.

Presented with the ANCOVA results in Appendix E and F are estimates of growth in terms of grade equivalents. The mean pre- and posttest scaled scores were converted to appropriate grade equivalents and the mean observed change was calculated. While this analysis can result in a built-in bias in favor of the initially low-scoring group,[1] it is presented as an extension of the ANCOVA and provides a yardstick to measure growth against expectations with respect to national norms. Although generally, a 1 year change in grade equivalent would be expected or "normal" growth, Dr. Bjorn Karlsen, an author of the SDRT, proposes that this expectation is unreasonable for low achieving students.[2] He presents evidence that a .6-.7 average growth rate for the lowest 25% would be a more reasonable expectation. Therefore, while it may appear that low-scoring groups are losing ground with respect to normal expectations, a program may produce educationally significant results with growth rates of less than 1 year to lower achieving students.

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[1] Lord, p. 37.

[2] B. Karlsen, "Accountability - A Year's Growth in a Year?" The California Reader, Vol. 5, No. 1, January 1972.

The covariance analyses were applied to two cohort groups:

- Whole grade cohort groups at each Special Emphasis and its comparison school.
- Lower achieving student groups, i.e., those students below the mean pretest score for their grade cohort groups.

The whole grade analysis was within the scope of GRC's original analysis plan. The below mean analysis was added to investigate program impact on those participants for whom Special Emphasis had been targeted. In addition, the study team was interested in determining whether or not the results of this analysis supported the results of the whole grade cohort analysis.

Several hazards are associated with the use of ANCOVA for below mean cohort groups. These are listed below and readers are advised to consider these limitations when reviewing the analytical results presented in Section 5 of this report.

- The proportion of students scoring below the grade mean in Special Emphasis and comparison groups may not be equal.
- The below mean cohort group for both Special Emphasis and comparison groups exhibit a preponderance of negative measurement error at the low end of the distribution.

Length of Project Analyses

To evaluate the impact of Special Emphasis over the length of the project, spring 1977 to spring 1979, two types of analyses were conducted. First, subgroups by site, by grade, were developed consisting of only those students with SDRT test scores for the spring 1977 and spring 1979 test points. The analysis of each of these subgroups was similar to the ANCOVA and the estimate of grade equivalent growth employed for the project year analysis. Due to sample attrition over the length of the study, only whole grade cohort groups were analyzed.

A second approach taken to investigate the impact of Special Emphasis over the duration of the project focused on students reading 1 or more years below grade level. It was based on an examination of trends relative to changes in the percentages of students reading 1 or more years below expectation.

Frequencies were tabulated for each spring testing of:

- The number of students tests for each grade.
- The number of students reading 1 or more years below grade level for each grade.

From these data, the percent of students reading 1 or more years below grade level was calculated. These data are contained in tables for each site in Appendix D.

### Summer Program Analyses

The impact analysis of Special Emphasis summer reading programs on reading retention presented special design problems. As originally designed, the study was to compare reading performance between students attending summer school and students at comparison schools without a summer program. Scores on the SDRT administered to both groups in the spring and fall were to be analyzed for differences in performance. Two facts necessitated dropping this investigation from the evaluation plan.

- Participation in Special Emphasis summer reading programs was voluntary. By electing to participate, program participants constituted a unique group for which no comparison group could be identified.

- The reading test used to measure performance in this study is normed on an individual student basis only for spring administration and on a class and individual basis for fall administration.

GRC attempted to override these problems by opting to compare the participant's performance with the individual student norms established for spring and fall testings. However, pervasive ceiling effects encountered on test scores prevented this analysis for producing valid and reliable results. A discussion of ceiling effects and their implication for this study is contained in Appendix G.

The preceding section addressed the major design and methodological features of this evaluation study and factors which limited the effective implementation and evaluation of Special Emphasis. While the real world conditions in local school systems do not provide the consistency and comparability necessary for a perfectly controlled experiment, the Special Emphasis experience illustrates that adjustments and corrective actions can be taken to provide insight to the impact of alternative treatments within the real world setting.

Complete results for the process and impact analyses of the Special Emphasis Project are reported in Sections 4 and 5. Appendix G of this report contains further discussion of evaluation methodology.

# SECTION 4

# THE SPECIAL EMPHASIS PROGRAM

## INTRODUCTION

Special Emphasis was mandated by Congress as an experimental intervention to improve the teaching-learning process for children likely to experience difficulty in learning to read. Accordingly, the evaluation of Special Emphasis sought to assess:

- The implementation of the concept and requirements of Special Emphasis as it was intended by Congress and the USOE guidelines.
- The character and the quality of the instruction-learning process.
- The outcome, or the effects, of the intervention, given the variables of student characteristics, instructional resources and facilities, and instructional methodologies.

The following discussions describe the implementation and the program features of Special Emphasis. The first part of this section provides a site-by-site analysis of the findings. These analyses are followed by a cross-site analysis of the seven local projects included in the study.

The following topics are discussed for each of the sites:

- Background--The community setting in which the project took place together with some of the major factors which influenced the initiation and implementation of Special Emphasis.
- Project Schools--A description of the characteristics of the experimental and comparison schools, the staff, the students, and the regular reading programs.
- The Special Emphasis Program--A description of the program, including the objectives, staffing, instructional processes, use of materials, provisions for inservice training, compliance with project guidelines, and special features and conditions.

- Summer Program--The major features of the vacation school instruction and related activities.
- Site Summary--The strengths and weaknesses of the local projects.

The cross-site analysis which follows the site-by-site descriptions provides a synthesis of project implementation, instructional processes, and management provisions within the network of projects.

## LOUISIANA

### Background

The Louisiana site lies in a rural area located 30 minutes driving distance from the nearest medium-sized town. The off-shore oil boom in the area is introducing rapid change to this community. The change has been accompanied by an influx of itinerant workers, settlement of highly trained, professional persons, and new employment opportunities. The main sources of income for the bayou area residents are sugar and sugar-related industries. Because this is a seasonal activity, the wage base for the area is severely curtailed; consequently, the school population is stable, but poor.

### Project Schools

There were four schools involved in the Special Emphasis Project in Louisiana. The school district has divided its student population into buildings serving grades 1 through 3 and grades 4 through 8. At this Special Emphasis site, both the treatment and comparison populations were each located in two buildings.

Enrollment characteristics for school year 1977-78 and 1978-79 are summarized on Table 4.1. The treatment and comparison schools in Louisiana were equal in terms of student demographic characteristics. However, there was considerable difference in the size of these two populations, the comparison group being more than twice as large. Although the higher enrollment at the comparison schools required a correspondingly higher number of teachers, the average class size in the comparison school exceeded the average class size in the treatment school by 9 students in 1977-78 and 4 students in 1978-79.

Table 4.2 provides a comparison of staff characteristics at the treatment and comparison schools for the 1977-78 and 1978-79 school years. Shifts in the percentage of teachers with graduate degrees and the average number of years of teaching experience were due to a normal process of staff turnover. In addition to the regular teaching

## TABLE 4.1

## ENROLLMENT CHARACTERISTICS

Site: LOUISIANA

| School: | Special Emphasis | | Comparison | |
|---|---|---|---|---|
| Project Year: | 1977-78 | 1978-79 | 1977-78 | 1978-79 |
| Number of Students | 301 | 304 | 724 | 715 |
| By Sex: | | | | |
| Male | 51% | 50% | 48% | 49% |
| Female | 49% | 50% | 52% | 51% |
| By Racial/Ethnic Categories: | | | | |
| Black | 58% | 56% | 52% | 50% |
| White | 41% | 41% | 47% | 49% |
| Hispanic | - | - | 1% | 1% |
| Other or uncategorized | 1% | 2% | * | * |
| Students Receiving Free or Reduced-Price Lunch | 54% | 53% | 47% | 45% |
| Students for Whom English is a Second Language | 3% | 5% | * | 1% |
| Students Absent More Than 25% | 1% | 3% | 6% | 4% |

Rounding estimates are responsible for column totals below or above 100%.

*Less than .5%

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## TABLE 4.2

## STAFF CHARACTERISTICS

Site: LOUISIANA

| School: | Special Emphasis | | Comparison | |
|---|---|---|---|---|
| Project Year: | 1977-78 | 1978-79 | 1977-78 | 1978-79 |
| Number of Teachers | 12 | 12 | 21 | 25 |
| Teachers with Graduate Degrees | 17% | 27% | 25% | 15% |
| Average Teacher Experience | 9 yrs. | 12 yrs. | 10 yrs. | 8 yrs. |
| Average Number of Students/Class | 25 | 25 | 34 | 29 |

staff, all schools at this site had a librarian, nurse, speech and reading specialist, counselor, and social worker. A physical education teacher served the treatment school; a music teacher was at the comparison school.

One Title I reading specialist and one aide were assigned to each school at this site. Students who qualified under Title I guidelines received up to 45 minutes per day of extra reading instruction at both treatment and comparison schools. In the treatment schools, the extra assistance these students received was coordinated with the regular classroom instructional program. This linkage did not exist at the comparison school. The Precision Teaching System was used for Title I in both schools. This system is a machine-assisted approach to teaching and practicing basic reading skills. The reading specialist worked with small groups or individuals, introducing skills and directing their learning experiences. Students practiced independently recording their work on scoring cards. These cards were machine scored and each student's skill attainment was recorded. Aides in the Title I labs supervised practice sessions with small groups, scored tests, and kept records. The Precision Teaching System was developed by the Special Emphasis project director.

A comparison of instructional time (excluding Title I) between schools reveals marked differences. First graders at the treatment school received a total of 120 minutes reading instruction daily; 90 minutes of this was Special Emphasis. At the comparison school, first graders received 90 minutes of reading instruction. Second and third graders at all schools received 90 minutes of daily instruction. At the treatment school, 60 minutes of this time was provided by Special Emphasis. Comparison school students, grades 4 through 6, had 15 minutes more of instruction each day (75 vs. 60 minutes). Students, grades 4 through 6, at the treatment school received no additional instruction beyond the 60 minutes per day of Special Emphasis. Thus, except for first grade, the comparison schools offered an equal or greater amount of reading instruction than the treatment schools.

Facilities and materials at treatment and comparison schools were well matched at this project site. The Houghton Mifflin basal reading series was used at all schools. The Houghton Mifflin series is a highly structured program featuring the sequential presentation of reading skills organized by behavioral objectives. The accompanying assessment tests (magazine levels) permit teachers to periodically measure student progress and skill mastery. Alternative instructional strategies and practice activities are provided for teachers to address skill deficiencies.

Both treatment and comparison schools had adequate audiovisual equipment and other instructional equipment and aids, such as tape recorders, overhead projectors, listening stations, teaching labs, and language masters. However, these aids received only minimal use, except in the Title I and Special Emphasis labs, where they received moderate use. The major difference between Special Emphasis and comparison schools was in instructional grouping of students. In 1977-78 over half (67%) of the teachers in the Special Emphasis schools considered small group instruction a major strategy versus less than 20% in the comparison school. Use of small groups and individualized instruction decreased in both schools in 1978-79 to 55% in the Special Emphasis schools and 4% in the comparison schools.

With respect to teaching orientation, an analysis of the Classification of Teaching Practices (Table 4.3) indicates that a majority of teachers in both Special Emphasis and comparison schools tended to be structured rather than flexible. Whether through staff turnovers or attitude shifts, a greater percentage of teachers in the Special Emphasis schools, however, was less structured during the final project year than in the comparison schools. Similarly, more comparison school teachers took a more diagnostic-prescriptive approach during the final project year. As a group, the Special Emphasis teachers tended to be less structured and more diagnostic-prescriptive than their comparison counterparts.

## TABLE 4.3

## CLASSIFICATION OF TEACHING PRACTICES

Site : LOUISIANA

| Teaching Orientation | 1977-78 | | | | 1978-79 | | | |
|---|---|---|---|---|---|---|---|---|
| | Special Emphasis | | Comparison | | Special Emphasis | | Comparison | |
| | N | %[*] | N | %[*] | N | %[*] | N | %[*] |
| Diagnostic Approach | | | | | | | | |
| Diagnostic-Prescriptive | 4 | 31 | 7 | 35 | 4 | 36 | 9 | 41 |
| Eclectic[†] | 9 | 69 | 4 | 20 | 6 | 55 | 7 | 32 |
| Whole Class | 0 | 0 | 9 | 45 | 1 | 9 | 6 | 27 |
| Management Style | | | | | | | | |
| Structured | 10 | 83 | 17 | 85 | 7 | 58 | 17 | 77 |
| Eclectic[†] | 1 | 8 | 3 | 15 | 3 | 25 | 5 | 23 |
| Flexible | 1 | 8 | 0 | 0 | 2 | 17 | 0 | 0 |

[*] Based on the number of classroom teachers responding.

[†] The designation "Eclectic" indicates a teaching orientation which combines elements from both approaches or styles.

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### The Special Emphasis Program

The overall objective of the Special Emphasis Program was to increase the percentage of students reading at grade level from 14% to 50% based on the California Test of Basic Skills. The second major goal was to determine the factors contributing to poor reading achievement and develop teaching methods to overcome these factors. All students, grades 1 through 6, were served by the Special Emphasis Program at this site.

### Project Staff

The Special Emphasis Project was under the supervision of a project director who divided his time between the administration and implementation of Special Emphasis and the Title I project. Although he was not a full-time employee of the school district, he was recognized by project staff for his educational leadership and for providing operational guidelines and materials for their instructional program.

Also assigned to the project were three reading specialists, all of whom had master's degrees and a minimum of 10 years' teaching experience. Each specialist served two grade levels, 1 and 2, 3 and 4, or 5 and 6. One aide assisted each specialist with small group instruction and record keeping. Aides were trained and supervised by the reading specialists. A part-time secretary/clerk served the project's needs.

## The Special Emphasis Treatment

According to local project policy, all students in grades 1 through 6 were served by the Special Emphasis Program in Louisiana. Table 4.4 shows enrollment and program participation data for project years 1977-78 and 1978-79. As noted, Special Emphasis provided 90 minutes of instruction for first grade students, 60 minutes were provided for students in grades 2 through 6.

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TABLE 4.4

TREATMENT GROUP SIZE BY GRADE LEVEL*

**Site: LOUISIANA**

| | Project Year 1977-78 | | Project Year 1978-79 | |
|---|---|---|---|---|
| | Total Enrollment | % Served By Special Emphasis | Total Enrollment | % Served By Special Emphasis |
| Grade 1 | 50 | 100 | 58 | 100 |
| Grade 2 | 39 | 100 | 38 | 100 |
| Grade 3 | 50 | 100 | 47 | 100 |
| Grade 4 | 58 | 95 | 54 | 100 |
| Grade 5 | 52 | 100 | 47 | 100 |
| Grade 6 | 52 | 100 | 60 | 100 |

*Based on Experimental School Principal Questionnaire.

Special Emphasis instruction took place in the reading specialist's lab-type classroom with the specialist, classroom teacher, and aide present. Classes, averaging 25 students, were brought to the reading room and divided into groups according to reading ability and skill needs. Each group then rotated through a series of activities. In general, the reading specialist conducted instruction, the teacher provided follow-up and practice activities, and the aide supervised oral reading or independent work. The roles of the teacher and aide shifted according to teacher preference. A listening station provided a fourth activity in the specialist's room.

Teachers, reading specialists, principals, and the project director were involved in planning the reading program at the treatment schools. Specialists and classroom teachers indicated that they reviewed student progress and jointly planned their instructional activities on a weekly basis; their dual teaching assignment offered them the opportunity to communicate daily. While the specialists clearly took the lead, there was an effort during the final project year to shift instructional responsibilities back to the classroom teachers.

### Use of Materials

Throughout the first year, Special Emphasis utilized the materials of the Precision Teaching System. Diagnostic quizzes, teaching strategies, and materials keyed to each of the 5000 identified reading skills, and evaluation quizzes were the core of this system. Automatic scoring machines provided immediate feedback to student and teacher. This program, however, was also used for the school district's Title I program. For the second and third years of Special Emphasis, the Precision Teaching System was used exclusively in Title I labs. With the reading specialist responsible for the basic instructional program in 1977-78 and 1978-79, the basal reading series (Houghton Mifflin), along with published and teacher-developed skill activities, were the major teaching resources used in Special Emphasis.

Inservice Training Program

A practical site-specific series of inservice training programs was offered to classroom teachers, specialists, aides, and principals. In 1976-77, the focus of the training was on analyzing the district-adopted basal reading series (Houghton Mifflin) to determine its appropriateness for the student population. Where the basal materials were found inappropriate, alternative strategies and materials were devised. Sessions were led by the project director. A local university recognized these sessions as an extension course and offered participants 3 hours of credit.

In 1977-78 and 1978-79, inservice training was conducted by the project director and a reading specialist. Participation was open to principals, teachers, specialists, and aides. The instructional focus of this training was on the implementation of a diagnostic-prescriptive approach to instruction, the selection of appropriate materials, and the interpretation of student assessment data. While academic credit was not offered, 52% (1978) and 64% (1979) of the classroom teachers attended inservice training and they rated the sessions "very helpful" (on a scale of not helpful, somewhat helpful, very helpful).

Summer Program

In 1978, the Louisiana project conducted a 20-day summer program serving approximately 170 students. This number represented over half of the project school's total enrollment, grades 1 through 6. Four reading specialists and four regular classroom teachers, serving as aides, were employed. In addition, two high school students regularly volunteered their services and an average of six parents accompanied the students on weekly field trips.

The objectives of this program were:

- To counter the regression of reading skills during the no-school, summer months.
- To foster language development.
- To provide remedial instruction for sub-grade-level readers.

Reading specialists handled four classes each day, providing instruction in 50-minute time blocks. In addition to the 50-minute reading class, each student had 50-minute periods of library, arts and crafts, and films and a 10-minute recreation break. The program operated from 8:20 AM to 12:30 PM.

The Houghton Mifflin basal series and Precision Teaching System for reading, which were the mainstays of the regular school year reading program, were used during the summer. Word and reading-related games were integrated into the summer instructional program.

Coordination of the summer and regular school year programs was accomplished through the use of identical commercial materials. No system for measuring student gains was built into the summer program. The role of the school principal during the summer was twofold: supervise instruction and maintain discipline. The project director supervised the operation of the overall program and provided technical assistance as needed.

In 1979, the staffing configuration in the summer program was changed to include four reading specialists, three teachers, and two teacher-librarians. Four aides from the school-year program were assigned to the summer program; three assisted teachers and one worked with the librarians. Teachers who had served as aides the previous summer were responsible for conducting reading classes in 1979. No volunteers were involved. At the conclusion of the summer program, the Special Emphasis reading specialists assisted principals in setting up reading groups for the coming school year. Table 4.5 provides a summary of the 1978 and 1979 summer program statistics.

## Compliance with Special Emphasis Guidelines

The following discussion examines features of the Louisiana project in light of the project guidelines listed in Section 2, Background.

## TABLE 4.5

## SUMMER PROGRAM SUMMARY

Site: LOUISIANA

| | Summer 1978 | Summer 1979 |
|---|---|---|
| Program Duration | | |
| Weeks | 4.0 | 4.0 |
| Hours per day | 4.0 | 4.0 |
| Instructional hours in reading and reading-related activities (hours per day) | 2.0 | 2.0 |
| Total School Enrollment | 301 | 304 |
| Summer School Enrollment | 170 | 160 |
| Percent of Total Enrollment | 56 | 53 |
| Teacher/Adult-Student Ratio | 1:21 | 1:12 |
| Staff | | |
| Reading Specialists | 4 | 4 |
| Teachers | 0 | 3 |
| Aides | 4(regular teachers) | 4 |
| Librarians | 0 | 2 |
| Gym/Art Teacher | 0 | 0 |
| Volunteers* | 2(students)<br>6(parents, Friday only) | 0 |

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*Volunteers not included in computing Teacher/Adult-Student Ratio.

A staff of reading specialists served the project schools. All students, grades 1 and 2, were served by Special Emphasis staff. All third through sixth grade students were also served by the program, thus extending service beyond the level specified in the guidelines. Instructional periods also exceeded guideline requirements. However, students in grades 4 through 6 at the comparison school had 15 minutes per day more instructional time than those at the treatment school. A summer reading program was provided and was well attended. Inservice efforts at this site consisted of presentations by the project director and a reading specialist. While funds to support academic course work were provided in the project budget, staff reported participation in accredited inservice training only in 1976-77. Planning of the reading program included district administrators, the project director, reading specialists, and teachers. Because reading specialists provided the basic reading instructional program for all grades in the treatment schools, classroom teachers actually had little to say in the planning and delivery of the program. Some effort to shift the responsibility for instruction back to the classroom teacher was made as the project neared its conclusion.

Diagnostic testing was conducted and used as a guide for grouping students for reading instruction. Achievement tests were administered periodically by the school district to measure student progress. Test results were made available for conferences with interested parents or guardians of individual students. No special activities to stimulate interest and improvement in reading were conducted.

Louisiana's skill mastery record keeping system utilized the Precision Teaching System and Houghton Mifflin basal reading series. However, neither of these systems can be attributed to Special Emphasis. Comparability of the schools involved in this study was compromised by the size of the two populations--the student body and staff at the comparison schools was twice that of the treatment schools.

Project personnel extended their cooperation to the evaluation study team. As specified in Appendix G, coding problems in Louisiana caused delays in the data reduction process and contributed to a loss in student test and survey data and parent survey data. Table 4.6 reports the response rates for the various evaluation study instruments.

The Louisiana site was in compliance with the Special Emphasis guidelines, with two exceptions: the size of the treatment and comparison populations, and the lack of a reading motivation component in Special Emphasis.

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TABLE 4.6

EVALUATION QUESTIONNAIRE RESPONSE RATES
(BY RESPONDENT GROUP)

Site: LOUISIANA

| | 1977-78 | | | | 1978-79 | | | |
|---|---|---|---|---|---|---|---|---|
| | Special Emphasis | | Comparison | | Special Emphasis | | Comparison | |
| | Number of Respondents | % of Population | Number of Respondents | % of Population | Number of Respondents | % of Population | Number of Respondents | % of Population |
| Project Director | 1 | 100 | N/A | | 1 | 100 | N/A | |
| Principal | 2 | 100 | 2 | 100 | 2 | 100 | 2 | 100 |
| Teacher | 12 | 100 | 17 | 81 | 12 | 100 | 25 | 100 |
| Reading Specialist | 5 | 100 | 2 | 100 | 4 | 80 | 2 | 100 |
| Classification of Teaching Practices: | | | | | | | | |
| Teachers | 12 | 100 | 19 | 90 | 11 | 92 | 22 | 88 |
| Reading Specialists | 3 | 60 | 0 | 0 | 1 | 20 | 0 | 0 |
| Librarian | 2 | 100 | 2 | 100 | 2 | 100 | 1 | 50 |
| Student - Grade 3 | 0 | 0 | 100 | 97 | 44 | 94 | 110 | 99 |
| Student - Grades 4-6 | 158 | 97 | 253 | 73 | 154 | 96 | 211 | 60 |
| Parent | 205 | - | 391 | - | 201 | - | 363 | - |
| Student Information Checklist | 301 | 100 | 674 | 93 | 266 | 87 | 657 | 92 |

N/A = Not Applicable

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### Special Features

A close working relationship between reading specialists and classroom teachers characterized this project. With the specialist serving as role model, collaborator, consultant, and de facto supervisor, classroom teachers reported the project offered them an opportunity to grow, adopt new practices, and gradually assume a stronger role in reading instruction.

Another noteworthy feature of the Louisiana project was the effort to customize the basal reading series to serve the needs of local students.

### Special Circumstances

The presence of the Precision Teaching System in both the treatment and comparison schools makes it difficult to isolate Special Emphasis and its impact on student reading achievement. Unlike the first year of operation, during the second and third years of program operation Special Emphasis reading specialists no longer replicated Title I operations. However, distinctions between Title I and Special Emphasis programs remained unclear.

Student retention (repeating the grade) was far more prevalent at this site than at the other study sites. Approximately 25% of the sixth grade students were retained following the 1977-78 school year. There was no limit to the number of years a student could remain at a particular grade level, and there was evidence of students repeating the same grade more than once. While many of these students might benefit from the services of a special education or learning disabilities program, parents were generally reluctant to identify, test, and place children in such settings.

### Summary

The key features of the Louisiana Special Emphasis Program were the diagnostic-prescriptive approach, the use of small group instruction to meet developmental skill needs, and a close linkage between Special Emphasis and classroom reading instruction. Because of the limited experience and deprived backgrounds of many students in this school district, school officials and staff have supported programs and strategies designed to overcome these social handicaps. The existence of the Title I Precision Teaching System, however, represented a confounding influence on any assessment of impact. All other indications were present for a genuine Special Emphasis educational intervention--from diagnostic programming to close faculty-specialist cooperation. At the same time, the presence of Precision Teaching may have had a benign effect on the study in that the visible amenities of additional instructional staff and equipment in the comparison school may have reduced the experimental contamination (the John Henry effect[1]). With Precision Teaching acting as a "placebo," comparison school teachers may not have been stirred to respond with a "we can work harder than you" campaign.

The Louisiana site was in compliance with the Special Emphasis guidelines, with two exceptions: the size of the treatment and comparison populations and the lack of a reading motivation component in Special Emphasis.

In terms of the site's original objectives, scores did improve on the district's standardized testing program but not as much as was hoped. In 1979, 30% were at grade level, up from 14% in 1976. While the 50% objective was not reached, school officials were pleased at the progress.

The second goal of the project was to determine factors contributing to reading problems. Over the course of the Special Emphasis project, reading specialists noted those skill areas particularly problematic for students in the treatment schools. They documented successful and unsuccessful instructional techniques and materials to serve as future resource guides for teachers working with low-achieving students.

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[1] G. Saretsky, "The OPO P.C. Experiment and the John Henry Effect," Phi Delta Kappan, 1972, 53,579-581.

From the perspective of local officials and staff, the Louisiana project was considered a success.

## MICHIGAN

### Background

The Michigan site is located in an independent city within the boundaries of a large metropolitan area. The city faces problems confronting most urban areas today: escalating costs, a shrinking tax base, and population flight. The corresponding impact on the city's schools includes frequent turnover of top administrators, budget cutbacks, teacher cutbacks, and transient student population. The school district, which serves the city, has sought assistance in a wide variety of Federal programs to address the mounting social, educational, and economic problems.

### Project Schools

The treatment and comparison schools in this site were well matched in terms of demographic characteristics of students, facilities, instructional approaches, and materials. Until the fall of 1978, both schools served students, grades kindergarten (K) through 6. At that time, sixth graders were transferred to another building, leaving a K through 5 population at each school. Enrollment characteristics of the two schools are displayed on Table 4.7. The table reveals highly comparable populations. Participation in subsidized lunch programs was very high at both schools. While students dropped out of the study due to family mobility, those that entered the study population reflected the same characteristics as those departing.

The shift in enrollment caused a decrease in teaching personnel as well. Average class size increased from 27 students to 32 and 34, respectively, at the treatment and comparison schools. Staff changes had the effect of closing the gap in education and experience between the two groups of teachers. Staff characteristics are summarized on Table 4.8.

In addition to classroom teachers, both schools at this Special Emphasis site had numerous specialists providing services for the school population. These were a librarian, a speech specialist, a learning disabilities specialist, nurse, reading specialist, physical education and music/arts teachers, a counselor, a social worker, and a psychologist.

## TABLE 4.7

## ENROLLMENT CHARACTERISTICS

Site: MICHIGAN

| School: | Special Emphasis | | Comparison | |
|---|---|---|---|---|
| Project Year: | 1977-78 | 1978-79 | 1977-78 | 1978-79 |
| Number of Students | 670 | 602 | 588 | 515 |
| By Sex: | | | | |
| Male | 52% | 51% | 49% | 49% |
| Female | 48% | 49% | 51% | 51% |
| By Racial/Ethnic Categories: | | | | |
| Black | 96% | 96% | 99% | 99% |
| White | 1% | 1% | * | * |
| Hispanic | * | - | - | - |
| Other or uncategorized | 3% | 3% | 1% | 1% |
| Students Receiving Free or Reduced-Price Lunch | 79% | 81% | 81% | 81% |
| Students for Whom English is a Second Language | 2% | 1% | 4% | 3% |
| Students Absent More Than 25% | 8% | 6% | 5% | 7% |

Rounding estimates are responsible for column totals below or above 100%.

*Less than .5%

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## TABLE 4.8

## STAFF CHARACTERISTICS

Site: MICHIGAN

| School: | Special Emphasis | | Comparison | |
|---|---|---|---|---|
| Project Year: | 1977-78 | 1978-79 | 1977-78 | 1978-79 |
| Number of Teachers | 25 | 19 | 22 | 15 |
| Teachers with Graduate Degrees | 48% | 65% | 71% | 67% |
| Average Teacher Experience | 7 yrs. | 11 yrs. | 13 yrs. | 15 yrs. |
| Average Number of Students/Class | 27 | 32 | 27 | 34 |

State and Federally sponsored programs abounded. Both schools were eligible for and received Title I services. Each had a full-time Title I reading specialist and a reading consultant funded by the state and district. Three district reading aides were assigned to the treatment school. They worked in conjunction with several teachers providing tutorial instruction and assisting with small groups and materials preparation. At the comparison school, the district had assigned four reading aides. These aides worked exclusively with the DISTAR program.

Both schools are housed in similar buildings erected in the 1920's. They appeared generally well maintained and each was brightened by colorful bulletin boards and public area displays. Neither school was air conditioned and some upper grade classrooms in the comparison school lacked ventilation. Equipment and materials were not lacking at either school. Software resources for reading instruction (e.g., kits, tapes, games, basals) were abundant.

Aside from Special Emphasis, the two schools were programmatically almost identical. The regular classroom reading program followed a traditional basal reader series and a district-developed skill mastery management (looping) system. DISTAR, a decoding program to enhance phonics and word recognition skills, was used in grades K and 1 at the treatment school, and grades K through 2 at the comparison school.

The school district required a minimum of 30 minutes of reading instruction daily. At the treatment school, first and second graders had 70 minutes of instruction, all under the supervision of Special Emphasis personnel. Third through fifth/sixth graders spent 30 minutes per day in classroom reading instruction with selected students receiving an additional 30 minutes from Special Emphasis personnel. At the comparison school, all students had 80 minutes of language arts instruction, which included reading as well as spelling, grammar, and writing.

A comparison of teaching practices at the Special Emphasis and comparison schools (Table 4.9) reveals an exceptionally close match. Teachers in both schools tended to be diagnostic-prescriptive in their approach. A slight majority in both schools preferred a structured learning environment with the remaining teachers mixing structure with some flexibility. In the Special Emphasis school, of those teachers responding in 1978 and 1979, staff turnover and/or shifts in orientation reflect a move from diagnostic-prescriptive to eclectic and whole class and from either structured or flexible to eclectic. In the comparison school, owing to either of the same factors, fewer teachers were diagnostic-prescriptive in 1979.

TABLE 4.9

CLASSIFICATION OF TEACHING PRACTICES

Site: MICHIGAN

| Teaching Orientation | 1977-78 | | | | 1978-79 | | | |
|---|---|---|---|---|---|---|---|---|
| | Special Emphasis | | Comparison | | Special Emphasis | | Comparison | |
| | N | %* | N | %* | N | %* | N | %* |
| **Diagnostic Approach** | | | | | | | | |
| Diagnostic-Prescriptive | 18 | 82 | 18 | 90 | 10 | 67 | 10 | 67 |
| Eclectic[†] | 4 | 18 | 2 | 10 | 4 | 27 | 5 | 33 |
| Whole Class | 0 | 0 | 0 | 0 | 1 | 7 | 0 | 0 |
| **Management Style** | | | | | | | | |
| Structured | 11 | 50 | 10 | 50 | 9 | 60 | 10 | 66 |
| Eclectic[†] | 8 | 36 | 7 | 35 | 6 | 40 | 2 | 13 |
| Flexible | 3 | 14 | 3 | 15 | 0 | 0 | 3 | 21 |

[*] Based on the number of classroom teachers responding.

[†] The deisgnation "Eclectic" indicates a teaching orientation which combines elements from both approaches or styles.

## The Special Emphasis Program

The particular objectives articulated by the staff for the project were:

- Project participants will achieve 1 month's growth for each month in the program.

- Students will demonstrate a more positive attitude toward reading.
- Parents and community members will demonstrate awareness and positive support of the program.
- Teachers will improve their skills in the teaching of reading.

The program designed to achieve these objectives utilized the school district's regular reading program (basal plus a skill mastery system) and introduced the reading specialist/teacher and aide to assist in and enhance its delivery.

### Project Staff

The Special Emphasis Project was headed by a school district central officer administrator. The original project director left after the 1977-78 school year and another school administrator inherited Special Emphasis. Due to the multiple other responsibilities which these directors had, neither assumed strong leadership roles in the educational or administrative aspects of the project. Instead, the head reading specialist provided overall direction and leadership; however, her lack of position in the administrative structure limited her ability to provide strong direction to the program. The project school principal played a support role but was not actively involved in the program.

A private school was a nominal participant in the project from fall 1976 to spring 1978, but was not included in the evaluation. During this period, one project reading specialist and one aide were assigned to the private school on a half-time basis.

Five reading specialists and six aides were employed by the Special Emphasis Project. All five specialists had graduate degrees; their years of teaching experience ranged from 3 to 16. The five reading specialists were each assigned specific grade levels. Two worked with first and second grades and one served each of the remaining third, fourth, and fifth grades. Reading specialists trained and supervised the aides who provided individual attention to designated students and prepared materials.

### The Special Emphasis Treatment

In the first and second grades, reading specialists worked in the regular classroom with the classroom teacher present. During the 70-minute reading period, student groups rotated between the specialist, classroom teacher, and aide. In general, the classroom teacher conducted the basal reader program, while the specialist provided enrichment and skill reinforcement activities. As might have been expected, planning sessions and conferences regarding student progress occurred frequently at these grade levels. First and second grade teachers planned weekly with project staff.

In the third through fifth grades, students receiving Special Emphasis instruction met with a reading specialist outside their regular classroom for small group instruction. The frequency of their attendance depended upon the degree of their reading deficiency. Third through fifth/sixth grade teachers and reading specialists typically conferred toward the end of each grading period.

In addition to isolated enrichment skill development and reinforcement activities, reading specialists introduced and used a content-oriented approach to reading. This approach called for the teaching of reading in the context of specific subject areas, such as social studies or science. While this approach was used at all grade levels, it was most prevalent at the fifth grade level.

The communication between the regular classroom teachers and Special Emphasis staff appears to have improved over the operation of the program. The relationship between each classroom teacher and the reading specialist assigned to his or her class was individualized. That is, the reading specialist and the specific classroom teacher mutually agreed to procedures for implementing Special Emphasis instruction--rather than following a prescribed schoolwide system.

## Use of Materials

The instructional program at this site was based upon the use of the basal reading series (K-3, Bank Street Readers; 4-5, Holt, Rinehart, Winston, and Houghton Mifflin; 6, Holt, Rinehart, Winston). A locally devised management system was developed for use in conjunction with the Bank Street Readers. Guided by publisher information, project personnel identified the sequential skills covered by the basal series. Next, they selected workbook pages to be completed by students and graded by staff. A score of 80% or above indicated student mastery of a particular skill. Students who failed to meet this criterion were guided through an alternative series of activities and retested. Records of each student's progress were maintained by the classroom teachers and specialists. DISTAR materials were also a component of this program for first grade. Students in grades 3-5/6 used commercially available reading collections as part of their reading program. Aside from the management system used by the project school, materials used on conducting the reading program were the same at both schools.

## Inservice Training Program

Inservice training opportunities in the form of workshops were available to teachers at the treatment school. These were provided by the project director, reading specialists, and, in 1976-77, by an outside consultant who conducted several sessions for which college credit was given. Participation was voluntary. Fewer than half of the classroom teachers attended these workshops and reported they were "somewhat" helpful in enabling them to carry out their classroom reading activities. Questionnaires were administered to the staff inviting their input regarding content for the workshop sessions. Topics covered included interpersonal relations, implementation of a diagnostic-prescriptive approach to teaching reading, teaching reading in the content areas, diagnosis of reading problems, and motivational activities.

## Summer Program

In 1978, the Michigan project ran a 17-day summer program. The program ran from 9 AM to 12 PM and consisted of 160 minutes of reading instruction or reading-related activities followed by a 20-minute supervised lunch. Enrollment was 148, with attendance averaging 120 daily.

The program's objectives were:

- To retain skills through review and reinforcement activities.
- To diagnose student needs and individualize instruction.
- To focus on comprehension skills.

Four reading specialists, five teachers (including a librarian and gym teacher), and nine paraprofessionals were employed. Each specialist and teacher handled four groups of 10-20 students for 40-minute periods. No volunteers participated in the program.

Teacher-made and commercially-developed materials were used along with paperbacks and filmstrips. Students also made books for use during the summer. Basal readers were not used.

The summer program was informal, and its thread of continuity with the regular school year program was the stress on comprehension skills. The project director basically served as a facilitator, assisting in the planning of special events, and as manager/administrator, assuring the timely processing of staff payroll and the availability of supplies.

A unique feature of this program was the way in which library and gym periods were directly related to reading instruction. Students participated, on a rotating basis, in 40-minute library or gym periods 4 days of the week. In addition, they could earn an extra gym period based on their performance during the week. The extra gym period was used as a motivational device.

In 1979, Michigan ran a 20-day summer program. Students attended school from 9 AM to 12 PM, with instructional periods from 9 to 11:30 AM. A 30-minute lunch, supervised by teachers in the classrooms, followed. Enrollment was 126.

Program objectives for 1979 were:

- To review and reinforce student skills.
- To extend and enrich skills of students at grade level.
- To provide opportunity for recreational reading.

The staff for this program was reduced and, unlike the program of the previous year, was strictly academic. Two reading specialists, five regular classroom teachers, and seven aides comprised the staff. The district-level decision to conduct a summer program was made after students had been dismissed on the last day of the regular school year. The appointed staff was contacted over the weekend and requested to report on the following Monday. No program had been planned; no special activities were provided. Several days into the program, the onsite program supervisor was informed that he had a budget of approximately $50 for materials. An alternative workbook series served as the curriculum guide and source of instruction and activities. A limited selection of books from the school library was placed in each classroom. Table 4.10 provides a summary of program statistics for 1978 and 1979.

## Compliance with Special Emphasis Guidelines

The following discussion focuses on the adherence of the Michigan project to the USOE guidelines for Special Emphasis.

This site assigned a full complement of reading specialists to serve students at the project school. All first and second graders were covered as stipulated in the guidelines. Michigan, however, did not provide for instruction of all third through sixth graders having reading problems. Lack of compliance was acknowledged and brought to the attention of USOE by site personnel. According to data supplied by the site, third through fifth grade students received 30 minutes of daily reading instruction. This was below the minimum time required by project guidelines (40 minutes).

The evaluation team considered the summer program for project year 1977-78 an outstanding effort. Largely due to the efforts of the

## TABLE 4.10

## SUMMER PROGRAM SUMMARY

Site: MICHIGAN

| | Summer 1978 | Summer 1979 |
|---|---|---|
| Program Duration | | |
| Weeks | 3.5 | 4.0 |
| Hours per day | 3.0 | 3.0 |
| Instructional hours in reading and reading-related activities (hours per day) | 2.75 | 2.5 |
| Total School Enrollment | 670 | 602 |
| Summer School Enrollment | 148 | 126 |
| Percent of Total Enrollment | 22 | 21 |
| Teacher/Adult-Student Ratio | 1:8 | 1:9 |
| Staff | | |
| Reading Specialists | 4 | 2 |
| Teachers | 3 | 5 |
| Aides | 9 | 7 |
| Librarians | 1 | 0 |
| Gym/Art Teacher | 1 | 0 |
| Volunteers* | 0 | 0 |

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*Volunteers not included in computing Teacher/Adult-Student Ratio.

head reading specialist, trips, lunch, library activities, and physical education were integrated into the instructional program. The 1978-79 summer program was strictly reading instruction. No planning preceded the effort and direction regarding program goals and an operating budget was never specified. The individual assigned to administer the program was unfamiliar with Special Emphasis.

The inservice program in Michigan was unclear from the evaluation data. Some training sessions were held. However, they were poorly attended and poorly received by the teachers. Participation in program planning did not extend beyond the district principal reading specialist levels. No attempt to draw additional groups into the planning process was noted. From teacher comments, it appears that the greatest handicap of this particular project was the lack of dialogue and consensus on program objectives. Teachers, reading specialists, and the project director inheriting this project agreed that goals and objectives for this program had never been clearly formulated and articulated.

A skill mastery record keeping system existed in Michigan, independent of Special Emphasis. An outstanding feature of this project was the well matched treatment and comparison groups. Other project guidelines, including diagnostic testing, achievement testing, and the availability of test results to parents or guardians were met. Activities to stimulate interest in reading which included the participation of teachers, administrators, parents, and students were not observed or reported by site personnel.

The evaluation study team encountered resistance to the prescribed procedures for test administration at this site. This problem is documented in Appendix G. Project personnel cooperated fully with efforts to correct coding problems. Table 4.11 reports the response rates for the various data collection instruments.

## TABLE 4.11

## EVALUATION QUESTIONNAIRE RESPONSE RATES
## (BY RESPONDENT GROUP)

Site: MICHIGAN

| | 1977-78 | | | | 1978-79 | | | |
|---|---|---|---|---|---|---|---|---|
| | Special Emphasis | | Comparison | | Special Emphasis | | Comparison | |
| | Number of Respondents | % of Population | Number of Respondents | % of Population | Number of Respondents | % of Population | Number of Respondents | % of Population |
| Project Director | 1 | 100 | N/A | | 0 | 0 | N/A | |
| Principal | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| Teacher | 25 | 100 | 21 | 95 | 17 | 89 | 15 | 100 |
| Reading Specialist | 6 | 100 | 1 | 100 | 4 | 67 | 1 | 100 |
| Classification of Teaching Practices: | | | | | | | | |
| Teachers | 22 | 88 | 20 | 91 | 15 | 79 | 15 | 100 |
| Reading Specialists | 1 | 17 | 1 | 100 | 5 | 83 | 1 | 100 |
| Librarian | 1 | 100 | 0 | 0 | 1 | 100 | 1 | 100 |
| Student - Grade 3 | 99 | 89 | 95 | 93 | 131 | 100 | 100 | 77 |
| Student - Grades 4-6 | 264 | 87 | 239 | 88 | 205 | 91 | 170 | 76 |
| Parent | 335 | - | 412 | - | 444 | - | 289 | - |
| Student Information Checklist | 657 | 98 | 583 | 99 | 602 | 100 | 515 | 100 |

N/A = Not Applicable

In summary, Michigan experienced difficulty in implementing a project which met established guidelines. This site was out of compliance in the following areas:

- Treatment of all third through fifth/sixth graders having reading problems.
- Minimum of a 40-minute reading instruction period for third through fifth/sixth grade students.
- Broad-based participation in program planning.
- Broad-based participation in activities developed to stimulate interest in reading.

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## Special Features

The role of reading specialists at this site was to implement the regular school developmental reading program. Thus, opportunities to employ their expertise and creativity were limited somewhat by the prescribed basal program. The wide variety of reading specialist-classroom teacher teaming modalities was a unique feature of this site.

## Special Circumstances

According to the project director, the project was not able to serve all children, grades 3 through 6, who were reading one or more years below grade level because of staff time constraints. While this situation rendered this project out of compliance with USOE guidelines, the USOE and project personnel agreed upon a level of participation to include only students in the lowest 20% of each grade 3-6 to receive Special Emphasis instruction. Table 4.12 summarizes participation and enrollment data for 1977-78 and 1978-79.

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TABLE 4.12

TREATMENT GROUP SIZE BY GRADE LEVEL*

Site : MICHIGAN

| | Project Year 1977-78 | | Project Year 1978-79 | |
|---|---|---|---|---|
| | Total Enrollment | % Served By Special Emphasis | Total Enrollment | % Served By Special Emphasis |
| Grade 1 | 131 | 100 | 120 | 100 |
| Grade 2 | 125 | 100 | 117 | 100 |
| Grade 3 | 111 | 26 | 130 | 23 |
| Grade 4 | 104 | 33 | 112 | 27 |
| Grade 5 | 93 | 17 | 113 | 27 |
| Grade 6 | 106 | 23 | - | - |

*Based on Experimental School Principal Questionnaire.

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Parent involvement was nonexistent in either planning or operating the program. An informal awareness effort was undertaken by distributing informational literature at the school open house. The Special Emphasis staff attempted to involve parents by preparing materials to assist them in working with their children at home.

The relationship between the project school and comparison school was poor due to the lack of communication regarding rationale, duration, and procedures for the comparison school's participation in the study. In addition, some teachers in the comparison school felt that testing procedures and the testing schedule imposed by the Special Emphasis staff were disadvantageous to their students. Teachers at the comparison school also expressed resentment over the extra work when they and their students received no benefits.

## Summary

The strengths of the Michigan project were the comparability between the treatment and comparison schools, the experienced staffs, the generally flexible working relationship between the reading specialists and the classroom teachers, and the 1977-78 summer program. Obvious limitations on the experimental design were the project's lack of consensus objectives, the problems in following prescribed testing procedures, and the project's inability to serve the entire target group of readers in grades 3 through 6. The diversion of project resources to the participating private school may have compromised project effectiveness.

There was no evidence that the original objectives set for the project had been met. The project director indicated that students in the project school had improved on the district's standardized tests, though he made no claim that they had gained 1 month's growth for each month in the project.

## OHIO

### Background

Both the experimental and comparison schools at the Ohio site lie less than 1 mile apart in a downtown fringe area of a large industrial city. Two major problems confronted the public schools of this city during the Special Emphasis Project. First, the Ohio ban on deficit spending caused severe budgetary constraints. Second, a court order to desegregate schools forced major staff and student shifts among schools.

The staff at the Ohio site had initially embraced the opportunity Special Emphasis afforded to pilot a new approach to their reading curriculum. The project received strong central office support and persevered despite overwhelming local problems. Although the project continued to operate during the 1978-79 school year, GRC, with the concurrence of USOE, decided to drop the site from the evaluation because of insurmountable problems, namely, the closing of the comparison school and a lengthy teacher strike. Therefore, the description of this Special Emphasis Program and discussion of its impact covers the period of operation from spring 1977 to fall 1978.

### Project Schools

The treatment and comparison schools at this site were fairly well matched in terms of size and the socioeconomic and demographic characteristics of students. There were 301 students in the treatment school and 233 students in the comparison school (grades 1 through 6). The population of the area in which the schools are located is urban, predominantly white, and transient. Children transferred frequently between the two schools. Between 66% and 72% of the two schools' families received public assistance funds. Interestingly, neither school received Title I funds. Table 4.13 summarizes student enrollment data.

## TABLE 4.13

## ENROLLMENT CHARACTERISTICS

Site: OHIO

| School: | Special Emphasis | | Comparison | |
|---|---|---|---|---|
| Project Year: | 1977-78 | 1978-79 | 1977-78 | 1978-79 |
| Number of Students | 301 | N/A | 233 | N/A |
| By Sex: | | | | |
| Male | 49% | - | 48% | - |
| Female | 51% | - | 52% | - |
| By Racial/Ethnic Categories: | | | | |
| Black | 1% | - | - | - |
| White | 89% | - | 88% | - |
| Hispanic | 8% | - | 7% | - |
| Other or uncategorized | 2% | - | 5% | - |
| Students Receiving Free or Reduced-Price Lunch | 66% | - | 72% | - |
| Students for Whom English is a Second Language | 9% | - | 10% | - |
| Students Absent More Than 25% | 5% | - | 11% | - |

Rounding estimates are responsible for column totals below or above 100%.

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New principals were assigned to the treatment and comparison schools in the fall of 1977; both had a positive orientation toward Special Emphasis. The comparison school staff had fewer classroom teachers due to its lower enrollment. However, average class size was nearly identical (30 at the treatment, 29 at the comparison). A higher proportion of comparison school teachers had master's degrees. Likewise, the level of experience was higher for the comparison school teachers. Table 4.14 provides a comparison of staff characteristics at each school.

## TABLE 4.14
## STAFF CHARACTERISTICS

Site: OHIO

| School: | Special Emphasis | | Comparison | |
|---|---|---|---|---|
| Project Year: | 1977-78 | 1978-79 | 1977-78 | 1978-79 |
| Number of Teachers | 10 | - | 8 | - |
| Teachers with Graduate Degrees | 11% | - | 29% | - |
| Average Teacher Experience | 14 yrs. | - | 20 yrs. | - |
| Average Number of Students/Class | 30 | - | 29 | - |

Facilities and services in the two schools were disparate. The project school occupied a modern building with ample library space, a new gymnasium, a cafeteria, and playground. Supplementary services were provided by a school nurse, a speech and hearing specialist, and a school district psychologist. Additional tutoring in reading was available from a learning disabilities specialist, and the school librarian provided supplementary enrichment activities. In contrast, the comparison school was in an old but well maintained building. There was no learning disabilities specialist, psychologist, or school nurse. The librarian's role was limited to providing reading materials and guidance to classroom teachers.

The treatment and comparison schools were adequately supplied with books, instructional materials, and audiovisual equipment. However, it appears that the quantity and quality of these resources were greater at the treatment school.

Except for Special Emphasis, the reading programs at the treatment and comparison schools were similar. The regular classroom reading program in both schools was based upon the school's basal reading series (Houghton Mifflin for grades 1 through 3, and Harcourt Brace for grades 4 through 6). A district-wide management system was employed in each school to monitor student progress. The system was locally developed and spanned grades 1 through 6.

A survey of teaching styles in the respective schools, based on the Classification of Teaching Practices instrument (Table 4.15), revealed a close similarity between the two. If any differences existed, the comparison school teachers as a group were slightly more diagnostic-prescriptive and slightly more flexible than the Special Emphasis school teachers. According to responses on the teacher questionnaire, no comparison school teachers utilized large group instruction as a major strategy, whereas 40% of the teachers in the Special Emphasis did.

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TABLE 4.15

CLASSIFICATION OF TEACHING PRACTICES

**Site :** OHIO

| Teaching Orientation | 1977-78 | | | | 1978-79 | | | |
|---|---|---|---|---|---|---|---|---|
| | Special Emphasis | | Comparison | | Special Emphasis | | Comparison | |
| | N | %* | N | %* | N | %* | N | %* |
| **Diagnostic Approach** | | | | | | | | |
| Diagnostic-Prescriptive | 6 | 60 | 5 | 71 | DATA NOT AVAILABLE | | | |
| Eclectic † | 4 | 40 | 2 | 29 | | | | |
| Whole Class | 0 | 0 | 0 | 0 | | | | |
| **Management Style** | | | | | | | | |
| Structured | 8 | 80 | 5 | 71 | DATA NOT AVAILABLE | | | |
| Eclectic † | 2 | 20 | 2 | 29 | | | | |
| Flexible | 0 | 0 | 0 | 0 | | | | |

*Based on the number of classroom teachers responding.

†The designation "Eclectic" indicates a teaching orientation which combines elements from both approaches or styles.

The staff of the comparison school in Ohio expressed dissatisfaction with its involvement in the Special Emphasis Project. Staff members complained that little effort was made to explain the project and their role in it or to provide sufficient advance notice of testing dates.

## The Special Emphasis Program

The objectives for the Ohio Special Emphasis Project were:

- Reading specialists/teachers will provide reading instruction for all children in grades 1 through 2 and for children with reading problems in grades 3 through 6.
- Pre- and inservice training will be provided throughout the project period for professionals and other assigned adults in project schools.
- Project staff will implement a 4-week summer program for children enrolled in project schools.

Data in Table 4.16 indicate that this project was not serving all first and second grade students as required by Special Emphasis guidelines.

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TABLE 4.16

TREATMENT GROUP SIZE BY GRADE LEVEL*

Site: OHIO

| | Project Year 1977-78 | | Project Year 1978-79 | |
|---|---|---|---|---|
| | Total Enrollment | % Served By Special Emphasis | Total Enrollment | % Served By Special Emphasis |
| Grade 1 | 59 | 47 | DATA NOT AVAILABLE | |
| Grade 2 | 53 | 58 | | |
| Grade 3 | 44 | 73 | | |
| Grade 4 | 50 | 50 | | |
| Grade 5 | 46 | 39 | | |
| Grade 6 | 49 | 67 | | |

*Based on Experimental School Principal Questionnaire.

At the outset, it should be noted that events and conditions at this site crippled the Special Emphasis Project. District-wide budgetary problems, staff reassignments, and ambiguities in status had demoralized the entire staffs at both schools. Reassignment of substantial numbers of students at the project school and the closing of the comparison school precluded evaluation efforts after fall 1978. Within the program, the greatest handicaps were lack of staff continuity (both reading teachers received termination notices in spring 1978 and two teachers having seniority replaced them) and erratic instructional periods due to teacher strikes. When schools finally reopened in fall 1978, Special Emphasis instruction continued. However, the student and staff populations at the project school were considerably altered, and the evaluation was discontinued.

A nonpublic school was a nominal participant in Special Emphasis at this site. One reading specialist and an aide provided services to this school. No data were collected from the specialist, and the SDRT was never administered to these Special Emphasis students.

The overall instructional design of the Ohio project focused on a language experience approach to reading. Special Emphasis attempted to address the student's minimal language facility and, in so doing, complement the existing classroom developmental program in reading. The program stressed four principles:

- Expanding complexity, flexibility, and precision of language and thought
- Modeling new language patterns
- Eliciting children's use of new language
- Providing specific praise for use of precise language

Project Staff

A full-time project director with no other regularly assigned responsibilities served this project. The director's primary function was to set guidelines for the conduct of the program. In addition, she selected and ordered necessary materials and supplies. A full-time project secretary assisted the director with administrative and record keeping tasks.

Two reading teachers provided reading instruction at the treatment school. Neither had a graduate degree nor experience as a reading teacher prior to Special Emphasis. Their responsibilities included: screening, testing, diagnosing reading problems, and assigning children to groups on the basis of their reading skills. One of these teachers assisted in the planning and delivery of the inservice training program. While reading teachers reported that they met weekly with classroom teachers to plan instructional activities, this was not corroborated by classroom teachers. According to the latter, they typically conferred with the reading teachers once or twice a month.

Three aides participated in the program. They were involved in record keeping, materials development, and remedial reinforcement activities. They were hired by the project director and trained by the reading teachers.

### The Special Emphasis Treatment

Each reading teacher was located in a classroom imaginatively organized into various learning centers and an area suitable for group instruction. Upon arrival, students participated in a 20-minute group instruction period. They were then assigned to particular learning stations for independent or small group reinforcement activities.

First and second graders came to the reading teachers' classrooms for instruction each morning and spent about 40 minutes with the reading teacher daily. In the afternoon, third through sixth graders in groups numbering 10-12 reported to the reading teachers' classroom. These students were selected from their regular classrooms on the basis of their skill deficiencies. Each student participating in Special Emphasis returned to his or her classroom with a daily follow-up activity. This was a unique effort to inform classroom teachers and integrate them into the Special Emphasis Program. In general, the classroom teacher was the students' primary reading instructor, with the reading teacher acting in a reinforcement and supplemental role.

### Use of Materials

Instructional aids utilized in the Ohio program included the overhead projector, a tachistoscope, tape recorders, and controlled reader. Listening stations, record players, and a movie projector were also used. Games, kits, trade books, and teacher developed learning aids were integrated into the instructional program. Students appeared to find Special Emphasis classes appealing.

### Inservice Training Program

Teachers at the project schools (public and private) were offered inservice training opportunities. According to questionnaire responses, they spent up to 4 hours per month in training. Inservice activities were planned and presented by the project director and one of the Special Emphasis reading teachers. The sessions were characterized as having marginal value by about half of the staff who attended and responded.

### Summer Program

The 1978 Special Emphasis summer program in Ohio ran for 4 weeks, offering diversified reading activities over a 3-hour period. Basic objectives were:

- To reinforce and continue instruction in the skill areas covered during the regular school year.
- To offer enrichment for those students not participating in Special Emphasis during the regular school year.

Approximately 70 students were served including those in the public treatment school and the participating private school.

Two reading specialists and four aides were employed by this program. The students were divided into two groups, one composed of first and second graders, the other of third through sixth graders. Each reading specialist handled both groups at different 1 1/2 hour periods in the day. Reading specialists spent 15 minutes of each day giving reading instructions to the four aides, who also received additional training in weekly staff meetings.

The design for the summer program was determined and structured by the staff. While commercially prepared kits were used to some extent in the teaching of reading, teachers relied more heavily on materials which they developed themselves. Predeveloped materials used by teachers consisted of individualized reading kits and creative writing kits.

Prior to the end of the regular school year, children were tested for skill mastery and informal classroom teacher assessments were solicited. The summer program then followed up on needs of individual students identified by these assessments. Informal diagnostic probes were made at the end of the summer to chart student progress.

The project director's role was primarily one of coordination and administration. The director also served as a substitute teacher when necessary.

Noteworthy features of the summer program were the focus on creative expression as well as the emphasis on skill application. Summer program statistics for 1978 are presented on Table 4.17.

Compliance with Special Emphasis Guidelines

Data from the Ohio site were reviewed to assess adherence to the implementation guidelines during the 1977-78 project year--the last year Ohio was included in the evaluation.

## TABLE 4.17

## SUMMER PROGRAM SUMMARY

Site: OHIO

| | Summer 1978 | Summer 1979 |
|---|---|---|
| **Program Duration** | | |
| Weeks | 4.0 | DATA NOT AVAILABLE |
| Hours per day | 3.0 | |
| Instructional hours in reading and reading-related activities (hours per day) | | |
| Total School Enrollment | 301 | |
| Summer School Enrollment | 70 | |
| Percent of Total Enrollment | 23* | |
| Teacher/Adult-Student Ratio | 1:12 | |
| **Staff** | | |
| Reading Specialists | 2 | |
| Teachers | 0 | |
| Aides | 4 | |
| Librarians | 0 | |
| Gym/Art Teacher | 0 | |
| Volunteers | 0 | |

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[*] This percentage is slightly inflated by the participation of some students from the private school Special Emphasis Program.

This project had two reading teachers working in the treatment school during the 1977-78 project year. All first and second graders were purported to be served, however, data previously presented do not support this claim. It is not known whether respondent error accounts for the less than 100% participation at the first and second grade levels. The minimum instructional period of 40 minutes was met. A creative summer learning program was operating during the 1977-78 project year. Inservice training consisted of informal sessions provided by the project director and one of the reading teachers. Program planning and/or participation in the Ohio project did not extend beyond the school district and school staff levels. Broad-based participation was to be a major thrust during 1978-79, but Ohio was not included in this study that project year. A skill mastery record keeping system adopted by the school district was used in Special Emphasis. Diagnostic reading test results were available for teacher use at this site as were achievement tests and by classroom teachers, were available to interested parents and guardians. The Ohio project attempted to stimulate parent interest in the development of student reading skills through a program focused on parental games and activities which contributed to the enhancement of reading skills. Lack of interest and participation persuaded project staff to discontinue this program following the initial session. Except for a marked difference in physical facilities and slight disparity in the available instructional materials, as previously noted, the schools at this site were comparable.

The Ohio site was supportive of the evaluation effort. Due to circumstances beyond the control of project personnel, all testing procedures could not be honored. Table 4.18 reports response rates for the various data collection instruments.

The Ohio project appears to have adhered to all USOE guidelines except for some question with regard to participation by students in grades 1 and 2.

## TABLE 4.18

## EVALUATION QUESTIONNAIRE RESPONSE RATES
## (BY RESPONDENT GROUP)

Site: OHIO

| | 1977-78 | | | | 1978-79 | | | |
|---|---|---|---|---|---|---|---|---|
| | Special Emphasis | | Comparison | | Special Emphasis | | Comparison | |
| | Number of Respondents | % of Population | Number of Respondents | % of Population | Number of Respondents | % of Population | Number of Respondents | % of Population |
| Project Director | 1 | 100 | N/A | | | | | |
| Principal | 1 | 100 | 1 | 100 | | | | |
| Teacher | 10 | 100 | 7 | 88 | | | | |
| Reading Specialist | 2 | 100 | N/A | | | | | |
| Classification of Teaching Practices: | | | | | | | | |
| Teachers | 10 | 100 | 7 | 88 | | | | |
| Reading Specialists | 0 | 0 | N/ | | | | | |
| Librarian | 1 | 100 | 1 | 100 | | | | |
| Student - Grade 3 | 42 | 95 | 44 | 92 | | | | |
| Student - Grades 4-6 | 129 | 89 | 93 | 98 | | | | |
| Parent | 124 | - | 149 | - | | | | |
| Student Information Checklist | 295 | 98 | 233 | 100 | | | | |

N/A - Not Applicable

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Special Features

There was no evidence of parent involvement at this site through spring 1978. Some parents were aware of the program from references at PTA meetings.

The potential at this site for significant Special Emphasis impact on reading skills appeared to be high. A full-time project director, creative reading teachers, abundant materials and equipment, and a skill mastery management system were exemplary features. However, the acceptance and integration of Special Emphasis within the schools appeared to be handicapped by the lack of classroom teacher input and participation.

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## Special Circumstances

An interesting feature, unique to this site, was the concern for the confidentiality of questionnaires. Several classroom teachers hand delivered their completed forms to the evaluators, as did the reading teachers. This concern is apparently related to the critical nature of their comments regarding the program.

The general atmosphere at the Ohio site was one of uncertainty. Desegregation and budgetary issues had everyone speculating about future assignments and status. Disgruntled teachers at the comparison school filed a union grievance over their role as administrators of the SDRT. Unable to await resolution, the project director and a school district reading supervisor administered the SDRT in this school.

## Summary

The strengths of the Ohio project were the central office leadership and support, the creativity of the two reading teachers, and the unifying focus of the language experience approach to reading instruction.

The problems were many. In addition to the external influences of budget cuts, teacher reduction layoffs, and desegregation orders which affected staff morale, problems internal to the project site also impinged upon the project. The resentment and lack of cooperation on the part of comparison school teachers increased the possibility of experimental contamination. Although the Special Emphasis classroom teachers appreciated the presence of the reading teachers, they felt excluded from the planning process and thus not a part of the program.

Of the goals initially set by the Ohio project, the first, to serve all, was not met; the second, inservice training, was met; and the 4-week summer program was also met. These goals, however, were simply statements of Special Emphasis regulations.

## TENNESSEE

### Background

The Tennessee project schools are located in the rural outskirts of a metropolitan area. Many of the families in the area have had little contact with the urban environment and are culturally distant from the newer families moving into the area as a result of urban sprawl. The school district, which served the greater suburban area, was experiencing rapid growth. An ambitious building program and staff recruitment effort were attempting to keep pace. Alarmed by the increasingly poor performance of its students on standardized reading tests and disappointed in the results of Title I, the district applied for a Special Emphasis grant. Working on the hunch that the key to improving student performance was teacher performance, the project director placed strong emphasis on staff development and on the formative role of the reading specialists in the regular classroom. The project was characterized by a thorough application of project guidelines and strong project administration.

### Project Schools

The Special Emphasis school is located in a well-maintained older building. Its traditional structure housed a traditionally structured education program. Each self-contained classroom averaged 29 students during the 1978-79 school year.

In contrast, the comparison school is housed in a new building featuring an open space environment. However, teachers separated their individual class units by using barriers such as book cases and portable blackboards. Classes averaged 23 in this school during 1978-79, considerably fewer than the experimental school.

Both schools served kindergarten through eighth grade students; however, all enrollment and staff data gathered for the purposes of this study were for grades 1 through 6. Students in the two schools came from the same geographical area and eventually attend the same high school. The experimental school enrollment was larger than the comparison school's; there was also a higher percentage of black students in this population than at the comparison school. Both schools qualified for, and received, Title I services. Table 4.19 summarizes student enrollment data for school years 1977-78 and 1978-79. No significant changes were noted from one year to the next.

TABLE 4.19

ENROLLMENT CHARACTERISTICS

Site TENNESSEE

| School: | Special Emphasis | | Comparison | |
|---|---|---|---|---|
| Project Year: | 1977-78 | 1978-79 | 1977-78 | 1978-79 |
| Number of Students | 335 | 314 | 213 | 207 |
| By Sex: | | | | |
| Male | 51% | 50% | 55% | 55% |
| Female | 49% | 50% | 45% | 45% |
| By Racial/Ethnic Categories: | | | | |
| Black | 74% | 71% | 52% | 53% |
| White | 26% | 29% | 48% | 47% |
| Hispanic | - | - | - | - |
| Other or uncategorized | * | * | - | * |
| Students Receiving Free or Reduced-Price Lunch | 81% | 79% | 73% | 62% |
| Students for Whom English is a Second Language | - | * | - | * |
| Students Absent More Than 25% | 5% | 2% | 2% | 4% |

*Less than .5%

Rounding estimates are responsible for column totals below or above 100%.

The staff of the experimental school was slightly larger than the comparison school's staff. Experimental teachers had twice as much teaching experience as comparison school teachers, who were apparently younger and more recently trained. The percentage of teachers holding graduate degrees, however, was almost identical. Table 4.20 summarizes staff characteristics for school years 1977-78 and 1978-79. These data show little change over this time period.

TABLE 4.20

STAFF CHARACTERISTICS

Site: TENNESSEE

| School: | Special Emphasis | | Comparison | |
|---|---|---|---|---|
| Project Year: | 1977-78 | 1978-79 | 1977-78 | 1978-79 |
| Number of Teachers | 12 | 11 | 9 | 9 |
| Teachers with Graduate Degrees | 21% | 36% | 20% | 33% |
| Average Teacher Experience | 16 yrs. | 15 yrs. | 7 yrs. | 7 yrs. |
| Average Number of Students/Class | 28 | 29 | 24 | 23 |

Excluding Special Emphasis staff, the experimental school had a total of three reading specialists--one Title I and two funded by the Emergency School Assistance Act (ESAA). The comparison school had two reading specialists--one Title I and one ESAA. Both schools had the services of a librarian, nurse, speech teacher, physical education teacher, psychologist, and social worker. In addition, the comparison school had a music teacher on its staff.

Both schools had classroom aides assisting with reading instruction. There were five aides in the experimental school; each reading specialist had an aide and grades K through 3 shared two aides. The two reading specialists at the comparison school each had an aide. These two aides also worked directly with classroom teachers as time and needs dictated.

A comparison of the reading programs at these two schools reveals notable differences. During the 1977-78 school year, the treatment school used DISTAR as its primary instructional strategy. This program monitors student progress through skill levels; regrouping based upon outcome measures takes place frequently. A basal text was used as a supplementary resource. In 1978-79, DISTAR and the basal were installed as co-equals. On the other hand, the primary instructional strategy at the comparison school was the basal text series through 1977-78. In 1978-79, DISTAR was introduced in the comparison school and used in conjunction with the basal.

Neither school had a wealth of materials or equipment for use in reading instruction. Teachers generally had the district-adopted text, DISTAR materials, and some audiovisual equipment at their disposal. They improvised or created other teaching materials for use with their students.

With respect to the instructional orientation of the teachers (Table 4.21), teachers in both schools claimed to take a diagnostic-prescriptive rather than whole-class approach. By the end of the project, both schools had a balance with respect to structured and moderately structured teaching styles. A review of teacher questionnaires completed in 1978 and 1979 reveals that a higher percentage of comparison school teachers in 1978 used individualized instruction as a primary grouping strategy than Special Emphasis teachers (45% vs. 14% in the treatment school). However, this difference evened out in 1979.

TABLE 4.21

CLASSIFICATION OF TEACHING PRACTICES

Site : TENNESSEE

| Teaching Orientation | 1977-78 | | | | 1978-79 | | | |
|---|---|---|---|---|---|---|---|---|
| | Special Emphasis | | Comparison | | Special Emphasis | | Comparison | |
| | N | %* | N | %* | N | %* | N | %* |
| **Diagnostic Approach** | | | | | | | | |
| Diagnostic-Prescriptive | 10 | 91 | 8 | 89 | 9 | 82 | 8 | 89 |
| Eclectic † | 0 | 0 | 1 | 11 | 2 | 18 | 1 | 11 |
| Whole Class | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Management Style** | | | | | | | | |
| Structured | 9 | 82 | 5 | 44 | 6 | 55 | 5 | 56 |
| Eclectic † | 2 | 18 | 3 | 44 | 5 | 45 | 4 | 44 |
| Flexible | 0 | 0 | 1 | 11 | 0 | 0 | 0 | 0 |

*Based on the number of classroom teachers responding.

†The designation "Eclectic" indicates a teaching which combines elements from both approaches or styles.

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## The Special Emphasis Program

The overall objectives of the Tennessee project were:

- To operate an intensive reading project that will facilitate pupil growth and lend itself to evaluation.
- To operate a project which demonstrates a balanced, flexible approach to teaching reading in the diagnostic-prescriptive mode.
- To provide inservice training to instructional staff and aides.

- To encourage parent/community involvement by providing structured activities, information, and opportunities for participation.

An additional objective was specified for the final project year: to operate a project which will provide residual benefits once funding ends.

The Tennessee project operated smoothly throughout its duration. The treatment and comparison schools reported no major problems as a result of their participation in the study. However, the treatment school found it difficult to schedule classroom and reading lab time around the many other special programs operating in the school. Both schools cooperated fully with the evaluation effort, diligently subscribing to the testing protocol and coding requirements.

Involved in planning the overall reading program at the Tennessee treatment school were the project director, the principal, reading specialists, and several teachers. On the individual class level, reading instruction and student grouping were determined by the classroom teacher and the respective reading specialist.

Project Staff

Three reading specialists were assigned to the Special Emphasis Project. Two were with the project throughout its duration; one turnover occurred midway through the final year. All specialists had master's degrees and a minimum of 8 years of teaching experience. One specialist served grades 1 and 2. The remaining two, served grades 3 through 6.

Three aides served the project, one assigned to each specialist. Aides were supervised by the reading specialists and the principal. Formal training was provided through the Special Emphasis inservice program and individually by each specialist. Aides' duties included preparation of instructional materials and small group remedial and follow-up instruction. In addition, a clerical aide provided record keeping and support services for the project.

The Special Emphasis Treatment

At the onset of the Tennessee project, reading specialists provided intensive reading instruction independently of the classroom teachers. Midway through the first year, the program was restructured to have project personnel teach cooperatively with the classroom teachers. This caused some confusion and delay in project services. However, once the change was completed, the project operated smoothly.

Reading specialists and aides worked in pairs. Throughout the morning, they moved from classroom to classroom to work with each class during its regularly scheduled reading period. During the afternoon, groups of students reported to the specialists' classrooms where they received corrective instruction in specific skills. As implemented at this site, Special Emphasis was, in fact, serving most of the student body. Table 4.22 summarizes project participation figures for project years 1977-78 and 1978-79.

TABLE 4.22

TREATMENT GROUP SIZE BY GRADE LEVEL*

Site: TENNESSEE

| | Project Year 1977-78 | | Project Year 1978-79 | |
|---|---|---|---|---|
| | Total Enrollment | % Served By Special Emphasis | Total Enrollment | % Served By Special Emphasis |
| Grade 1 | 54 | 100 | 48 | 100 |
| Grade 2 | 53 | 100 | 46 | 100 |
| Grade 3 | 58 | 83 | 55 | 62 |
| Grade 4 | 45 | 100 | 54 | 59 |
| Grade 5 | 59 | 100 | 45 | 51 |
| Grade 6 | 66 | 80 | 55 | 16 |

*Based on Experimental School Principal Questionnaire.

In grades 1, 2, and 3, a total of 90 minutes was devoted to reading instruction daily. Of this time, half was in the classroom with the teacher, reading specialists, and aide present. The remainder was provided by the specialist and aide in the reading lab. Grades 4, 5, and 6 received 105 minutes of language arts instruction each day during which the classroom teacher, specialist, and aide jointly provided a 45-minute period of reading instruction. Students requiring remedial work went to the lab for an additional 45 minutes of instruction each afternoon. The remaining language arts time was devoted to spelling, grammar, etc.

As prescribed in the Special Emphasis guidelines, mastery of reading skills was tracked for each student. Two record keeping systems were employed. Overall progress was assessed by Individual Criterion Reference Tests (ICRT), compiled by Educational Development Corporation. A multipage printout reflecting skill mastery and deficiency was available for each student. These skills were correlated to the school reading program materials (DISTAR, Houghton Mifflin) to assist teachers in keying their instruction to meet student needs. Houghton Mifflin criterion referenced tests were regularly administered and student skill mastery charted. This information was used to establish progress and determine instructional needs.

Staff schedules provided daily planning periods for all teachers and specialists. While these periods were not exclusively used for planning reading instruction, reading specialists met at least weekly with teachers to discuss progress and/or jointly develop instructional plans. For grades 1 through 4, assessment and information exchange occurred daily on an informal basis. Coordination between specialists and classroom teachers, as reported by both, was high.

Use of Materials

The major change introduced to the treatment school's reading program during the Special Emphasis Project was the use of DISTAR, a reading instruction management system. Students in grades 1 through

6 were exposed both to DISTAR's programmed materials and the basal reading series (Houghton Mifflin). In some classrooms, the teacher used the basal instructional program while the reading specialist or aide used DISTAR; in others it was reversed. There was agreement among teachers across all grades that the materials available for reading instruction were adequate to serve student needs. In cases where there were not enough items to permit each teacher to have his/her own, they were willingly shared. However, teachers did express a preference for individual student workbooks rather than the master ditto sheets in use.

## Inservice Training Program

In 1976-77, all teachers involved in the Special Emphasis Project participated in inservice training. The foci for staff development during this project year were: mastery of reading program objectives, implementation of a diagnostic-prescriptive approach to teaching reading, interpretation of assessment and evaluation data, and the preparation of support materials. The project director, reading specialists, and principal collaborated on preparing and conducting this program. In addition, a weekly course, taught by an outside consultant, was provided. The inservice programs in 1977-78 and 1978-79 were an extension of the one held the first year, and all teachers participated. Teachers reported that the inservice program was "somewhat helpful" in enhancing their classroom reading instruction. The teacher inservice component to Special Emphasis was one of the major factors motivating this project site to apply for Special Emphasis funds.

## Summer Program

The 4-week summer program conducted by the Tennessee site in 1978 was divided into a 4-day "work" week of intensive learning from 8:45 AM to 12:00 PM and a 30-minute reading period in the afternoon. Fridays were activity days usually reserved for field trips. Events on activity days were incorporated into the language experience part of classroom instruction. The program served 225 students.

Program objectives were:

- To retain and expand previously learned language and reading skills.
- To promote skills development in areas of student deficiency.
- To broaden student interest by providing enrichment activities and experiences.
- To provide teachers with an opportunity to experiment with innovative teaching methods/approaches.

Staff was comprised of three reading specialists, who coordinated and provided support to classroom teachers; 13 teachers, who instructed groups of 8 to 24 children; and three aides associated with the regular school year program. Each day, one to three volunteers provided assistance to the arts and crafts classes. In addition, several teenage girls, not eligible to participate in the summer program, volunteered their time as general aides.

Along with commercially prepared basic reading kits, teachers used locally developed instructional materials selected from workshops held during the school year. Much of the material chosen for the 1978 summer program focused on the development and/or strengthening of comprehension and decoding skills.

Program plans were developed before and during 3 days of inservice sessions with teachers. The summer program was an extension of the regular school program. Progress in reading was to be determined by comparing a student's spring Metropolitan Reading Test scores with those obtained in the fall.

Supervision of the program was provided by the experimental school principal and the project director. The principal was responsible for administration, management of the buildings, supplies, and class and bus scheduling. The project director served as trouble shooter and spent much time with project staff during the planning phase, and attended to central office administrative issues.

Outstanding features of this program were its highly organized structure, the active parent participation, the program's outreach efforts to involve the nonactive parents, and the reward of a paperback book each week for participating students.

The Tennessee summer program in 1979 was similar to the previous year, except for a slight drop in enrollment. Three additional classroom teachers were added and three fewer aides were hired.

A summary of summer program statistics for 1978 and 1979 is found in Table 4.23.

### Compliance with Special Emphasis Guidelines

The Tennessee project was in compliance with all but one of the established guidelines--the selection of matched treatment and comparison schools. As noted, the schools differed markedly with respect to demographics, faculty, class size and facilities.[1] In all other aspects, this site was in compliance with the guidelines.

The project was staffed by three reading specialists who served the entire student body, grades 1 through 6. Students having reading problems received additional attention. Instructional time exceeded the minimum established in the guidelines and that received by students in the comparison school. Test data, diagnostic and achievement, were available to teachers and parents/guardians as prescribed in the project guidelines.

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[1] Recent studies on the influence of open space classrooms on student outcomes have been inconclusive. However, the studies do indicate that teachers in these environments tend to differ from teachers in conventional classrooms through self-selection in that they exhibit more interaction with other teachers; have greater feelings of autonomy, satisfaction, and ambition; spend less time in routine activities; and place greater importance on evaluation by their colleagues. Data regarding differences in use of student-centered instruction and variable size groups are not clear. See Carol S. Weinstein, "The Physical Environment of the School: A Review of the Research." Review of Educational Research, Fall 1979, 49: 4, 577-610.

## TABLE 4.23

## SUMMER PROGRAM SUMMARY

Site: TENNESSEE

| | Summer 1978 | Summer 1979 |
|---|---|---|
| Program Duration | | |
| Weeks | 4.0 | 4.0 |
| Hours per day | 4.0 | 4.0 |
| Instructional hours in reading and reading-related activities (hours per day) | 3.5 | 3.5 |
| Total School Enrollment | 335 | 314 |
| Summer School Enrollment | 225 | 190 |
| Percent of Total Enrollment | 67 | 61 |
| Teacher/Adult-Student Ratio | 1:13 | 1:9 |
| Staff | | |
| Reading Specialists | 3 | 3 |
| Teachers | 13 | 15 |
| Aides | 3 | 3 |
| Librarians | 0 | 1 |
| Gym/Art Teacher | 0 | 0 |
| Volunteers* | 3 (parents)<br>3 (students) | 3 (parents)<br>3 (students) |

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*Volunteers not included in computing Teacher/Adult-Student Ratio.

A summer program was conducted each project year which included the operation of an inexpensive book distribution program, broad-based community participation, and activities designed to stimulate interest in reading.

A formal inservice training program was designed to meet teacher needs and included participation by an outside consultant. Reading program planning included the participation of parents, aides, and students in addition to those traditionally responsible for this task. The skill mastery record keeping systems in use (DISTAR, Houghton Mifflin) were initiated by Special Emphasis.

Project personnel were fully responsive to all evaluation study requirements. Table 4.24 reports response rates to the data collection instruments for each respondent group.

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TABLE 4.24

EVALUATION QUESTIONNAIRE RESPONSE RATES

(BY RESPONDENT GROUP)

Site: TENNESSEE

| | 1977-78 | | | | 1978-79 | | | |
|---|---|---|---|---|---|---|---|---|
| | Special Emphasis | | Comparison | | Special Emphasis | | Comparison | |
| | Number of Respondents | % of Population | Number of Respondents | % of Population | Number of Respondents | % of Population | Number of Respondents | % of Population |
| Project Director | 1 | 100 | N/A | | 1 | 100 | N/A | |
| Principal | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| Teacher | 12 | 100 | 9 | 100 | 11 | 100 | 9 | 100 |
| Reading Specialist | 6 | 100 | 2 | 100 | 6 | 100 | 0 | 0 |
| Classification of Teaching Practices: | | | | | | | | |
| Teachers | 11 | 92 | 9 | 100 | 11 | 100 | 9 | 100 |
| Reading Specialists | 1 | 17 | 1 | 50 | 6 | 100 | 0 | 0 |
| Librarian | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| Student - Grade 3 | 58 | 100 | 42 | 98 | 55 | 100 | 32 | 100 |
| Student - Grades 4-6 | 167 | 98 | 93 | 96 | 151 | 92 | 95 | 87 |
| Parent | 279 | - | 165 | - | 297 | - | 196 | - |
| Student Information Checklist | 327 | 98 | 209 | 98 | 106 | 97 | 207 | 100 |

N/A - Not Applicable

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### Special Features

Special Emphasis reading specialists served as resource persons and role models throughout the project. In addition to jointly planning the reading program and actively participating in the regular classroom instruction with the teachers, they provided remedial services, and inservice training.

The school librarian reported performing a wider variety of tasks with the beginning of Special Emphasis, regular contact with classroom teachers, and more involvement in the school's instructional effort.

The Tennessee project attracted more parent support than any other Special Emphasis site; in fact, more than the treatment school had known before. Parents were regularly informed and updated about the reading program and activities through a school newsletter. The project director, principal, and reading specialists used PTA meetings to inform and report to parents on the program. In addition, the school open house and parent conferences provided opportunities to focus on the project and student progress. The summer vacation reading program was a vehicle for parent participation.

### Special Circumstances

No special circumstances existed at the Tennessee site.

### Summary

The strengths of the Tennessee project were the strong organizational management provided by the principal, the close planning and coordination between reading specialists and the experimental school staff, and provisions for staff development. Its weaknesses were differences between the treatment and comparison school including instructional setting, class size, instructional materials, and student demographics.

By the end of the project, it was the consensus of project personnel and experimental school classroom teachers that the original objectives set for the project had been achieved. According to these staff, the most notable evidence was improvement in reading achievement on the locally administered Metropolitan Achievement Tests.[1] Teachers also reported that, by the end of the project, they were aware of and were using a greater variety of teaching methods and materials to meet student needs.

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[1] C.M. Achilles, J. Ray, H. O'Leary, and H. Crump, Analysis of the Tennessee Special Emphasis Project, paper presented to the annual meeting of the American Educational Research Association. San Francisco, California, April, 1979.

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## TEXAS

### Background

The Texas project site is located on the outskirts of a large urban area. Once rural, this community has experienced rapid growth in the last 15 years. The student population is almost 7 times larger than it was 15 years ago. Although there is little industry to provide tax support to the district, growth has been stimulated by the presence of a large university, a medical center, and three military bases.

### Project Schools

The physical facilities of the treatment and comparison schools are similar. Both school buildings are large, modern structures with self-contained classrooms housing kindergarten through fifth grades. The general upkeep of the buildings and grounds at both schools was good. Students, grades K through 5, were served at each building.

A substantial number of students, between 39% and 50%, at the two schools was Hispanic. This was the only Special Emphasis site requiring bilingual materials and resources. Of the remaining student population, the majority was white. Table 4.25 shows student enrollment characteristics for school years 1977-78 and 1978-79.

The comparison school had more students and, consequently, more classroom teachers than the treatment school. The level of experience represented by the two faculties was almost identical. However, a greater percentage of teachers at the treatment school had graduate degrees than at the comparison school. The student-teacher ratio at both schools was almost identical. Table 4.26 summarizes staff characteristics.

A full complement of specialists was assigned to both schools. This included learning disabilities and reading specialists; speech, music, and physical education teachers; counselors; and a part-time nurse. Aides at each school, three at the treatment and two at the comparison, provided general assistance to kindergarten and special education teachers.

# TABLE 4.25

## ENROLLMENT CHARACTERISTICS

Site: TEXAS

| School: | Special Emphasis | | Comparison | |
|---|---|---|---|---|
| **Project Year:** | **1977-78** | **1978-79** | **1977-78** | **1978-79** |
| **Number [illegible] Students** | 541 | 538 | 638 | 611 |
| **By Se[illegible]** | | | | |
| **Male** | 54% | 52% | 50% | 49% |
| **Female** | 46% | 48% | 50% | 51% |
| **By Racial/Ethnic Categories:** | | | | |
| **Black** | 5% | 5% | 9% | 8% |
| **White** | 45% | 42% | 52% | 44% |
| **Hispanic** | 48% | 50% | 39% | 46% |
| **Other or uncategorized** | 2% | 4% | 1% | 2% |
| **Students Receiving Free or Reduced-Price Lunch** | 44% | 60% | 39% | 41% |
| **Students for Whom English is a Second Language** | 16% | 18% | 12% | 17% |
| **Students Absent More Than 25%** | 2% | 2% | 4% | 4% |

Rounding estimates are responsible for column totals below or above 100%.

# TABLE 4.26

## STAFF CHARACTERISTICS

Site TEXAS

| School: | Special Emphasis | | Comparison | |
|---|---|---|---|---|
| **Project Year:** | **1977-78** | **1978-79** | **1977-78** | **1978-79** |
| **Number of Teachers** | 21 | 21 | 25 | 23 |
| **Teachers with Graduate Degrees** | 19% | 25% | 12% | 9% |
| **Average Teacher Experience** | 7 yrs. | 6 yrs. | 7 yrs. | 8 yrs. |
| **Average Number of Students/Class** | 26 | 26 | 26 | 27 |

Both schools received Title I services. An oral language program operated at the schools and was funded through Title I. This was a pull-out[1] program serving those students experiencing oral communication problems. The school district had assigned a reading specialist to each school. At the project school, this specialist worked in conjunction with the Special Emphasis project staff. At the comparison school, this specialist was responsible for screening and testing students; providing remedial, small group instruction; and acting as a consultant to teachers, grades 1 through 5.

Each school used the Houghton Mifflin basal reading series. To augment this material, teachers used commercially available kits, games, trade books, programmed materials, workbooks, and audio materials. Both schools had well supplied resource rooms. When asked if the materials available for teaching reading were adequate to meet their students' needs, teachers at both schools overwhelmingly (70%) answered "yes."

The results of the Classification of Teaching Practices questionnaire (Table 4.27) showed consistent differences in the instructional styles of the faculty in the Special Emphasis and comparison schools. Project school teachers were more diagnostic-prescriptive in their approach. A review of the data on the teachers' questionnaires showed that project school teachers made greater use of small group instruction than their comparison counterparts.

At the the Special Emphasis school, the regular reading program was conducted within each teacher's classroom. Daily instructional time amounted to 80 minutes for grades 1 through 5. At the comparison school, a modified Joplin Plan utilizing specialty area teachers in math, science, and language arts was followed. As part of this plan, students were assigned to classes according to ability during their reading period. Grades 1 and 2 spent 90 minutes in reading instruction daily; grade 3, 75 minutes; and grades 4 and 5, 60 minutes.

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[1] "Pull-out" refers to the practice of removing one or more students from the regular classroom to receive special instruction or undertake special activities.

TABLE 4.27

CLASSIFICATION OF TEACHING PRACTICES

Site: TEXAS

| Teaching Orientation | 1977-78 |  |  |  | 1978-79 |  |  |  |
|---|---|---|---|---|---|---|---|---|
|  | Special Emphasis |  | Comparison |  | Special Emphasis |  | Comparison |  |
|  | N | %* | N | %* | N | %* | N | %* |
| Diagnostic Approach |  |  |  |  |  |  |  |  |
| Diagnostic-Prescriptive | 16 | 76 | 10 | 40 | 15 | 75 | 9 | 39 |
| Eclectic[†] | 3 | 14 | 10 | 40 | 5 | 25 | 10 | 43 |
| Whole Class | 2 | 9 | 5 | 20 | 0 | 0 | 4 | 18 |
| Management Style |  |  |  |  |  |  |  |  |
| Structured | 17 | 81 | 20 | 80 | 17 | 85 | 17 | 74 |
| Eclectic[†] | 4 | 19 | 4 | 16 | 3 | 15 | 6 | 26 |
| Flexible | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 |

[*] Based on the number of classroom teachers responding.

[†] The designation "Eclectic" indicates a teaching orientation which combines elements from both approaches or styles.

## The Special Emphasis Program

The Special Emphasis Program at the Texas site set the following goals at the outset of the project:

- To provide intensive reading instruction to all first and second grade students by a reading specialist, classroom teacher, and aide.
- To provide instructional help by a reading specialist to all third through sixth grade students experiencing difficulty in learning to read or reading below grade level.

- To increase teacher proficiency in diagnosing and prescribing the reading needs of students.

To accomplish this latter goal, a rigorous inservice training program was conducted. In addition, during the final year of the project, this site focused on reinforcing those approaches and practices which reading specialists had modeled in the regular classroom. Classroom teachers assumed greater responsibility for student grouping and management of the reading program and activities.

### Project Staff

The Texas project was directed by a school district reading supervisor who also had numerous other responsibilities. Despite the limited amount of time she devoted to project activities, her administrative and programmatic leadership was evident. Day-to-day coordination of project activities was provided by the lead reading specialist. The project team consisted of six reading specialists, five aides, and one clerk. As of fall 1978, all reading specialists had graduate degrees.

### The Special Emphasis Treatment

Reading specialists at this site played a major role in the regular classroom reading program. In conjunction with first and second grade classroom teachers, they planned the basic instructional approach, grouped students, and conducted daily instructional activities. They selected and supplied materials and equipment to enhance each classroom program. An aide and specialist worked alongside the classroom teachers during the regular reading period. In addition, they returned to the classroom in the afternoon to work with individuals or a small group of students to reinforce learning. This arrangement necessitated a high degree of cooperation and coordination between reading specialists and primary grade teachers.

For grades 3 through 5, reading specialists worked with small groups of students in a lab-type classroom. Instruction was aimed at correcting skill deficiencies. The regular classroom reading program was conducted by the classroom teacher independently. Little evidence of coordination and/or planning between teachers and specialists was found in these grades. However, specialists attempted to keep teachers informed of the progress of those students they served.

In addition to materials preparation, teacher aides worked with small groups of students in grades 1 and 2. Students in grades 3 through 5 who needed remedial help received individualized attention from project aides.

Table 4.28 shows the percentage of students of the total enrollment served by Special Emphasis at the Texas site.

TABLE 4.28

TREATMENT GROUP SIZE BY GRADE LEVEL[*]

Site TEXAS

| | Project Year 1977-78 | | Project Year 1978-79 | |
|---|---|---|---|---|
| | Total Enrollment | % Served By Special Emphasis | Total Enrollment | % Served By Special Emphasis |
| Grade 1 | 125 | 79 | 104 | 100 |
| Grade 2 | 120 | 80 | 110 | 100 |
| Grade 3 | 107 | 47 | 126 | 45 |
| Grade 4 | 100 | 50 | 98 | 35 |
| Grade 5 | 90 | 62 | 100 | 48 |

[*] Based on Experimental School Principal Questionnaire.

## Use of Materials

In Texas, the basal reading series was the major resource for specialists working in grades 1 and 2. Teacher-developed and commercial skill activities along with trade books were the primary resources for specialists serving the higher grades.

Audiovisual equipment used most frequently to supplement basal and special reading materials included tapes and listening stations. Other equipment less routinely used included movies, overhead projector, language master, and tachistoscope.

The Texas site used a district developed skill mastery checklist to track student progress. Following testing at the onset of the school year, worksheets for each student were filled out reflecting skill attainment. These worksheets were updated as the student progressed. Reading specialists maintained a duplicate worksheet for students receiving Special Emphasis instruction in grades 3 through 5.

Inservice Training

Aides received special training in conjunction with the project. Training at the Texas site focused on diagnostic-prescriptive activities, design of motivational activities, development of instructional materials, and specific skill development in small group settings. Each aide received training in various kinds of remedial reinforcement activities. Aides appeared to be very effective in performing the tasks for which they had been trained.

All teachers at the project school participated in the inservice training program. The 20 hours of instruction were designed to answer specific program needs and emphasized: implementation of a diagnostic-prescriptive approach to teaching, preparation of support materials, evaluation of student progress, and interpersonal relations. Sessions were conducted by an outside consultant from a nearby university, the project director, and several Special Emphasis reading specialists. Teachers felt this training was "somewhat helpful" in enabling them to carry out their reading program activities.

The Texas project director conducted a training program for interested parents on ways they could become involved in the school reading program and help their children. As a result, seven parents volunteered to assist at school. They helped design motivational activities, developed materials, tutored students in other content areas, and provided small group instruction in specific skill areas. Because this school district was phasing out the employment of classroom aides, it was hoped that the parent volunteer could provide some services which would otherwise be discontinued.

## Summer Program

The Texas site, which conducted a 4-week summer session, had a total enrollment of 106 students in 1978. The program ran for 3 1/2 hours each day. This time was divided into 30-minute periods. Each period, students participated in one of the following activities: directed teaching of reading skills, language experience, listening skills, independent reading, skills reinforcement, library or arts and crafts period, and physical education. Special activities, such as field trips and special entertainment programs were held on Fridays.

The objectives of the program were:

- To upgrade the reading level of children functioning below grade level.
- To promote a positive attitude toward reading.

Teaching staff consisted of six reading specialists and six aides from the regular school year. All aides had at least 1 year of college. Twenty student interns from the University of Texas provided volunteer support for the program. Interns, who were Juniors or Seniors majoring either in education or reading, provided 2 hours of effort each day.

The staff developed some materials but relied heavily on predeveloped materials from Harcourt Brace, Houghton Mifflin, Scholastic, and others. A number of audiovisual aids supplemented these instructional tools. A skills test, devised by the school district, was administered to a child whenever a teacher felt that he/she had mastered a skill. Attendance for the summer session was 20% of the school year enrollment.

The 1979 summer program continued the same format and schedule as in 1978. The staff added one objective to those listed: to provide students with additional instruction in comprehension and vocabulary building.

Student interns did not participate in the 1979 summer reading program. Program statistics for 1978 and 1979 are contained in Table 4.29.

### Compliance with Special Emphasis Guidelines

The Texas project was reviewed for compliance with the legislation and the USOE regulations and was found to be in compliance with the major provisions and within the limitations cited for the recommended provisions.

Reading specialists who met USOE requirements were assigned to the project school. All first and second graders in 1978-79 received instruction by the specialists and those having problems in reading received additional aid from the specialists as well. Students in grades 3, 4, and 5 having reading problems received instruction by project personnel. Student instruction in reading exceeded minimum time requirements; however, at the comparison school, students in grades 1 and 2 received a greater amount of instruction (10 minutes daily). A summer program operated each project year as did a formal inservice training program which utilized an outside consultant. Program planning was largely a district administration task; little participation on the part of teachers or others occurred. Parents were involved in the program as tutors. Diagnostic and achievement testing took place on a systematic basis with the results available for teacher use. Interested parents/guardians were notified that they could request information and interpretation of their child's record keeping system. Activities to stimulate interest in reading which involved students,

## TABLE 4.29

## SUMMER PROGRAM SUMMARY

Site TEXAS

| | Summer 1978 | Summer 1979 |
|---|---|---|
| Program Duration | | |
| Weeks | 4.0 | 4.0 |
| Hours per day | 3.5 | 3.5 |
| Instructional hours in reading and reading related activities (hours per day) | 3.0 | 2.5 |
| Total School Enrollment | 541 | 538 |
| Summer School Enrollment | 106 | 123 |
| Percent of Total Enrollment | 20 | 23 |
| Teacher/Adult-Student Ratio | 1:3 | 1:10 |
| Staff | | |
| Reading Specialists | 6 | 6 |
| Teachers | 0 | 0 |
| Aides | 6 | 6 |
| Librarians | 0 | 0 |
| Gym/Art Teacher | 0 | 0 |
| Volunteers | 20 student interns | 0 |

parents, and broad-based participation of school personnel and officials were neither reported nor observed. Treatment and comparison schools were fairly well matched, except for using disparate approaches to reading instruction. Project staff extended their full cooperation to the study team and to the evaluation effort. Incidental coding and test administration errors occurred and were noted in Section 3. Table 4.30 presents response rates for each of the respondent groups in this site.

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TABLE 4.30

EVALUATION QUESTIONNAIRE RESPONSE RATES
(BY RESPONDENT GROUP)

Site: TEXAS

| | 1977-78 | | | | 1978-79 | | | |
|---|---|---|---|---|---|---|---|---|
| | Special Emphasis | | Comparison | | Special Emphasis | | Comparison | |
| | Number of Respondents | % of Population | Number of Respondents | % of Population | Number of Respondents | % of Population | Number of Respondents | % of Population |
| Project Director | 1 | 100 | N/A | | 1 | 100 | N/A | |
| Principal | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| Teacher | 21 | 100 | 25 | 100 | 20 | 95 | 23 | 100 |
| Reading Specialist | 7 | 100 | 1 | 50 | 7 | 100 | 2 | 100 |
| Classification of Teaching Practices: | | | | | | | | |
| Teachers | 21 | 100 | 25 | 100 | 20 | 95 | 23 | 100 |
| Reading Specialists | 7 | 100 | 0 | 0 | 7 | 100 | 0 | 0 |
| Librarian | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| Student - Grade 3 | 98 | 91 | 124 | 95 | 126 | 100 | 118 | 94 |
| Student - Grades 4-6 | 184 | 97 | 228 | 92 | 195 | 98 | 215 | 92 |
| Parent | 426 | - | 455 | - | 591 | - | 435 | - |
| Student Information Checklist | 538 | 99 | 604 | 95 | 510 | 100 | 611 | 100 |

N/A - Not Applicable

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## Special Features

The major thrust of the Special Emphasis project in Texas was found in grades 1 and 2. Personnel and material resources were concentrated at these levels. Reading specialists and aides worked within the structure of regular classroom units with the classroom teachers.

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felt that their teaching responsibility had been usurped. Sensitive to the hostility toward them and the project, the reading specialists attempted to establish cooperative working relationships with the teachers they served. With the specialists confining their roles to those that would complement the teachers' skills, classroom teachers were reassured of their own capability as teachers. Rather than the reading specialists "running the show," teachers and specialists planned and worked as a team.

During 1977-78, this new arrangement functioned smoothly. Teachers accepted the presence of the reading specialist in the classroom and accepted and integrated their suggestions, ideas, and advice regarding classroom management, instructional techniques and practices, and the use of materials. Reading instruction became a co-venture.

In 1978-79, project personnel made an effort to shift the full responsibility of decision making and planning with respect to reading to the classroom teacher. Reading specialists concentrated their efforts on reinforcing the application of a diagnostic-prescriptive approach to reading and on the development of creative learning and reinforcement activities.

Strong administrative support, both from the district and the experimental school principal, was evident. Keen interest in the Special Emphasis Program and reading in general was also evident. Both the experimental and comparison schools had exceptionally well stocked and well organized materials centers. These materials appeared to be circulated and used by teachers in their reading programs.

### Special Circumstances

The principal of the comparison school looked upon the Special Emphasis project as a competition between his school and the experimental school. However, the extent to which this influenced teachers and students is not known.

Due to misunderstanding, several coding and testing problems arose over the course of this study. First grade students were not administered subtests four and five of the SDRT during the spring 1978 testing. Coding on staff questionnaires was incomplete in spring 1979 and student identification numbers were duplicated. This last error was corrected by project staff, thus salvaging the SDRT data.

The school district at this site offered an inservice training program for all teachers. Both mandatory and optional sessions were held. Consequently, teachers at the comparison school received staff development opportunities equal to those at the Special Emphasis school.

## Summary

After its initial adjustment period, this project reflected a high level of teamwork between the Special Emphasis staff members and between the staff and classroom teachers. The close collaboration fostered two objectives: reading specialists provided instructional support to the classroom teachers, and specialists served as models for reading attitudes and practices for teachers and students.

The Texas site met two of its three objectives stated at the beginning of the project. By 1978-79, they were serving all first and second grade students and those in grades 3 through 5 needing special help. With respect to increasing teacher proficiency in diagnosing and prescribing the reading needs of students (the third objective), there are no definitive data. However, 70% of the teachers saw improvement in their colleagues attitudes toward reading.

## WEST VIRGINIA

### Background

A rural, mountainous, coal producing area of West Virginia is the site of this Special Emphasis Project. The community is comprised of close-knit groups who have resided in the area for many generations. Mother-daughter, husband-wife combinations are on the faculty of schools throughout the county, and district administrators are frequently related. Although many of the schools are in physically poor condition owing to age and lack of care, the community regularly turns down school bond referendums.

### Project Schools

The Special Emphasis students were housed in a new building built by the Federal Government and leased to the county under a flood control relocation program. Well lit and ventilated space, a large gym, separate cafeteria, spacious office area and lounge, and a designated parking area were among its amenities. The building and grounds were well maintained by the custodial staff and several students employed by manpower funds. The newness of the facility notwithstanding, the student population exceeded the capacity of the school causing overcrowding and high student-teacher ratios.

The comparison school population occupied an old building, in obvious disrepair. Dark corridors, cracked tile floors, temperamental utility and heating systems, and closet-size office and lounge areas characterized the facility. As in the treatment school, the available space was inadequate to serve the students who were in classes averaging 30 until the 1978-79 school year. At that time, the transfer of almost 15% of the student body to other district schools took the burden off this facility and greatly altered class size.

The composition of the student body at both schools was stable. Change in school assignment was due to administrative decision rather than family mobility. Consequently, enrollment characteristics such as ethnic attachment and SES remained fairly constant. These data are displayed on Table 4.31.

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## TABLE 4.31
## ENROLLMENT CHARACTERISTICS

**Site: WEST VIRGINIA**

| School: | Special Emphasis | | Comparison | |
|---|---|---|---|---|
| **Project Year:** | **1977-78** | **1978-79** | **1977-78** | **1978-79** |
| **Number of Students** | 414 | 436 | 395 | 342 |
| **By Sex:** | | | | |
| **Male** | 53% | 53% | 52% | 52% |
| **Female** | 47% | 47% | 48% | 48% |
| **By Racial/Ethnic Categories:** | | | | |
| **Black** | - | - | - | - |
| **White** | 99% | 100% | 100% | 99% |
| **Hispanic** | * | * | - | - |
| **Other or uncategorized** | - | - | - | 1% |
| **Students Receiving Free or Reduced-Price Lunch** | 74% | 62% | 54% | 56% |
| **Students for Whom English is a Second Language** | - | * | - | - |
| **Students Absent More Than 25%** | 5% | 4% | 7% | 7% |

*Less than .5%

Rounding estimates are responsible for column totals below or above 100%.

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The staff at the treatment school experienced very little turnover during the course of this study. However, 5 of the 13 teachers assigned to the comparison school in the fall of 1978 were new. As a group, the teachers at each school had similar levels of teaching experience and education. Table 4.32 summarizes this data for school years 1977-78 and 1978-79. Both schools had the services of similar specialized staff; special education, speech, and physical education teachers.

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## TABLE 4.32

## STAFF CHARACTERISTICS

Site: WEST VIRGINIA

| School: | Special Emphasis | | Comparison | |
|---|---|---|---|---|
| Project Year: | 1977-78 | 1978-79 | 1977-78 | 1978-79 |
| Number of Teachers | 13 | 13 | 13 | 13 |
| Teachers with Graduate Degrees | 18% | 8% | 20% | 8% |
| Average Teacher Experience | 12 yrs. | 15 yrs. | 13 yrs. | 10 yrs. |
| Average Number of Students/Class | 32 | 34 | 30 | 26 |

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The teaching orientation of the teachers in the Special Emphasis schools, as illustrated in Table 4.33, was decidedly diagnostic-prescriptive compared to the comparison school teachers, which, as a group, tended to take a middle road between the diagnostic-prescriptive and whole-class approach. A majority of teachers in both schools tended to be structured rather than flexible in teaching style, with the project school faculty reflecting a more structured style in 1978-79 than in the previous year.

Although both schools were eligible for Title I services, no Title I staff served the treatment school during the project. The comparison school had one Title I teacher serving the remedial needs of students throughout grades 1 through 6. Due to the scarcity of space, the Title I teacher had no assigned room in the building and most often worked in the hallway with small groups of children. Reading remediation was the focus of Title I during 1977-78, math during 1978-79. Four Title I aides were assigned to the comparison school: two assisted in kindergarten, one in the special education class, and one assisted teachers in grades 1 through 8 with reading.

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TABLE 4.33

CLASSIFICATION OF TEACHING PRACTICES

**Site : WEST VIRGINIA**

| Teaching Orientation | 1977-78 | | | | 1978-79 | | | |
|---|---|---|---|---|---|---|---|---|
| | Special Emphasis | | Comparison | | Special Emphasis | | Comparison | |
| | N | %* | N | %* | N | %* | N | %* |
| Diagnostic Approach | | | | | | | | |
| Diagnostic-Prescriptive | 8 | 67 | 3 | 33 | 8 | 62 | 7 | 58 |
| Eclectic† | 3 | 25 | 5 | 56 | 5 | 38 | 5 | 42 |
| Whole Class | 1 | 8 | 1 | 11 | 0 | 0 | 0 | 0 |
| Management Style | | | | | | | | |
| Structured | 7 | 58 | 6 | 66 | 12 | 69 | 5 | 42 |
| Eclectic† | 4 | 33 | 2 | 22 | 3 | 23 | 6 | 50 |
| Flexible | 1 | 8 | 1 | 12 | 1 | 8 | 1 | 8 |

*Based on the number of classroom teachers responding.

†The designation "Eclectic" indicates a teaching orientation which combines elements from both approaches or styles.

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The State of West Virginia had established instructional time requirements for the teaching of reading and the language arts. A minimum of 100 minutes per day was required for students in grades 1 through 6. The district-adopted basal reading series (American Book and Houghton Mifflin) standardized the basic teaching resources in all of the schools. Classroom reading was taught by following the basal series teacher's manual precisely.

A variety of hardware and software was available in the treatment school. Movie and overhead projectors, tape recorders, record players, alternative basal series materials, and reading kits were commonly used in classrooms at the treatment school. Movie projectors, record players, and a few alternative reading texts and kits were available at the comparison school; their use was infrequent.

## The Special Emphasis Program

The objectives of the West Virginia Special Emphasis Project were:

- To effect a statistically significant improvement in reading achievement.
- To correct 50% of the reading skill deficiencies as identified for each student each fall.

### Project Staff

The director of West Virginia's Special Emphasis Project was also the principal of the treatment school. He was onsite full-time and personally directed all aspects of the project. Due to his close supervisory relationship with the teachers in his building, he was able to assert strong leadership over the entire educational program.

Special Emphasis was staffed by one reading specialist, two reading teachers, three aides, and a part-time clerk. The reading specialist instructed students in grades 1 and 2, one reading teacher instructed students in grades 3 and 4, while the other instructed students in grades 5 and 6. Each reading specialist/teacher had the assistance of an aide. There was no change in project staff over the course of this study.

### The Special Emphasis Treatment

Each reading specialist/teacher had her own classroom in which all Special Emphasis instruction was conducted. The rooms were arranged to accommodate multiple group activities taking place simultaneously.

Each first and second grade class spent 50 minutes daily with the reading specialist. Students were grouped according to skill needs and the specialist directed her teaching to areas of need. The aide conducted reinforcement activities and provided individual help under the direction of the reading specialist. First and second graders received an additional 70 minutes of reading instruction from their classroom teachers. Those students receiving Special Emphasis instruction in grades 3 through 6 reported to one of the reading teachers daily. Third and fourth graders spent 40 minutes with a reading teacher, fifth and sixth graders spent 30 minutes. These students also had 80 and 40 minutes of reading instruction, respectively, by their classroom teachers. Whenever possible, the reading teacher worked with students as they were grouped for reading in the regular classroom so as to cause minimal disruption to internal classroom scheduling. Aides assigned to the reading teachers conducted reinforcement activities and performed record-keeping tasks.

The relationship between the reading specialists and classroom teachers appeared to be positive. A comparison between the questionnaire responses from these two respondent groups regarding their coordination showed that their perceptions were consistent with one another. For grades 1 and 2, the reading specialist and teachers planned and/or conferred on a weekly basis. For grades 3 through 6, this contact was less frequent.

Special Emphasis participation data are presented on Table 4.34 for years 1977-78 and 1978-79.

### Use of Materials

The overall instructional design for this project was based upon the use of the Wisconsin Design tests. Individual student's reading skill strengths and weaknesses were assessed in the fall using these materials. Reading specialists then keyed their instruction to the test results and tracked each student's progress. The Wisconsin Design provided a highly structured management system covering all students in the treatment school at this site.

## TABLE 4.34

## TREATMENT GROUP SIZE BY GRADE LEVEL*

**Site:** **WEST VIRGINIA**

| | Project Year 1977-78 | | Project Year 1978-79 | |
|---|---|---|---|---|
| | Total Enrollment | % Served By Special Emphasis | Total Enrollment | % Served By Special Emphasis |
| Grade 1 | 84 | 100 | 82 | 100 |
| Grade 2 | 61 | 100 | 82 | 100 |
| Grade 3 | 66 | 62 | 66 | 62 |
| Grade 4 | 69 | 68 | 64 | 63 |
| Grade 5 | 68 | 100 | 66 | 58 |
| Grade 6 | 66 | 94 | 76 | 38 |

*Based on Experimental School Principal Questionnaire.

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Reading skill instruction involved a variety of materials and hardware components. Kits, tapes, filmstrips, work sheets, games, listening stations, and lab-type arrangements were in use. These included both teacher and commercially developed items.

### Inservice Training Program

The inservice training provided by the Special Emphasis Project was well received by teachers. They claimed that it was "somewhat" or "very helpful" in enabling them to carry out their classroom reading activities. The training was of a practical nature, e.g., the development of materials for reading instruction. Reading specialists, classroom teachers, and aides all participated in inservice activities conducted by an outside consultant. Teachers were awarded academic credit for participating in these sessions.

### Summer Program

In 1978, approximately 175 children attended the 4-week summer program at the West Virginia site. Reading specialists worked an additional week, using the time to plan and prepare materials for the reading component of the program. Students were placed in class units organized by grade level. The program operated from 8:30 to 11:00 AM daily. Aside from the daily reading instruction, each student received a 15-minute exercise period and a 5-minute recess. Arts and crafts instruction was provided for 30 minutes, twice weekly. Students were transported to and from the program.

The main objectives were:

- To acquaint students with the world around them by exposing them to new experiences.
- To retain already developed skills and foster development of additional skills.
- To promote personal and professional growth by encouraging creative input from classroom teachers.

This program employed three reading specialists, each responsible for a particular group of students. Aides from the school year Special Emphasis program assisted reading specialists in handling the largest groups. Seven teachers assisted by five aides were likewise responsible for student groups. Each teacher conducted the 15-minute exercise period for her class. Approximately five parent volunteers assisted teachers on a daily basis. Parent volunteers were never assigned to their own child's class group. On Fridays, approximately 20 parent volunteers accompanied the children on field trips. All program volunteers were provided with daily bus transportation.

Both teacher-made and commercially developed materials were used for instruction. In most respects, the summer program was a continuation of the regular school year program. This arrangement permitted teachers to follow up on areas of pupil skill deficiency since their summer classes consisted almost entirely of their former students. No formal assessment was employed to measure gains made by students during the summer session.

The summer program was managed in much the same manner as the regular school program. The principal/project director performed routine supervisory, administrative, and coordinative functions; the reading program was executed by the reading specialists.

Notable features of this program were the integration of reading into the arts and crafts classes and the improved student/teacher ratio during the summer months. The broadening experiences of scheduled field trips was a much needed activity for children growing up in this area of the country where some families have little or no contact with outside areas. Class attendance at this site varied as the staggered vacation schedules of coal miners shifted.

Attendance at the 1979 summer program was considerably less than the previous year; 120 students enrolled. The instructional program as in the past, was an extension of the regular school year program. However, there was a greater emphasis on arts and crafts and physical education. Arts and crafts instruction was provided for 45 minutes, twice weekly. A daily 25-minute physical education class was scheduled for all students. In addition to the arts and crafts teacher and physical education teacher, two reading teachers, five classroom teachers, and four aides were assigned to the program. Two parent volunteers accompanied the students on Friday swim outings.

Program statistics are presented on Table 4.35 for 1978 and 1979.

### Compliance with Special Emphasis Guidelines

The following Special Emphasis components were in compliance. A staff of three--one reading specialist and two reading teachers--provided Special Emphasis instruction. All first and second grade students were served by project staff. Third through sixth graders who had reading deficiencies received remedial attention. All students received more than the 40-minute minimum standard for instruction. A summer program was conducted each project year. Inservice training was well attended and well received. An outside consultant conducted training sessions

## TABLE 4.35

## SUMMER PROGRAM SUMMARY

**Site:** WEST VIRGINIA

| | Summer 1978 | Summer 1979 |
|---|---|---|
| **Program Duration** | | |
| Weeks | 4.0 | 4.0 |
| Hours per day | 3.0 | 3.0 |
| Instructional hours in reading and reading-related activities (hours per day) | 2.5 | 2.0 |
| Total School Enrollment | 414 | 436 |
| Summer School Enrollment | 175 | 120 |
| Percent of Total Enrollment | 42 | 28 |
| Teacher/Adult-Student Ratio | 1:8 | 1:9 |
| **Staff** | | |
| Reading Specialists | 3 | 2 |
| Teachers | 7 | 5 |
| Aides | 5 | 4 |
| Librarians | 0 | 0 |
| Gym/Art Teacher | 1 | 2 |
| Volunteers | 5 parents | 2 parents, Friday* |

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*Volunteers not included in computing Teacher/Adult-Student Ratio.

in which new materials and learning aids were developed and for which credit was awarded. No participation in program planning took place beyond the participation of the LEA and the school principal. The Wisconsin Design was adopted by this site as a system for diagnosing student skill deficiencies and tracking skill mastery. District-administered achievement tests monitored student progress. Activities to motivate interest in reading (which included project school staff, student, and parent participation) were not conducted. The schools selected for Special Emphasis participation were poorly matched in terms of their physical environments and instructional aids. As specified in Section 3, intrasite problems and failure to comply with data requirements in a timely fashion posed difficulties for the evaluation effort. Table 4.36 presents the response rates for the various evaluation study instruments.

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### TABLE 4.36

### EVALUATION QUESTIONNAIRE RESPONSE RATES (BY RESPONDENT GROUP)

Site: WEST VIRGINIA

| | 1977-78 | | | | 1978-79 | | | |
|---|---|---|---|---|---|---|---|---|
| | Special Emphasis | | Comparison | | Special Emphasis | | Comparison | |
| | Number of Respondents | % of Population | Number of Respondents | % of Population | Number of Respondents | % of Population | Number of Respondents | % of Population |
| Project Director | 1 | 100 | N/A | | 1 | 100 | N/A | |
| Principal | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| Teacher | 11 | 85 | 10 | 77 | 13 | 100 | 12 | 92 |
| Reading Specialist | 3 | 100 | 1 | 100 | 3 | 100 | N/A | |
| Classification of Teaching Practices: | | | | | | | | |
| Teachers | 12 | 92 | 9 | 69 | 13 | 100 | 12 | 92 |
| Reading Specialists | 2 | 67 | N/A | | 3 | 100 | N/A | |
| Librarian | N/A | | N/A | | N/A | | N/A | |
| Student - Grade 3 | 51 | 77 | 0 | 0 | 59 | 89 | 62 | 95 |
| Student - Grades 4-6 | 105 | 52 | 0 | 0 | 97 | 47 | 129 | 78 |
| Parent | 156 | - | 0 | 0 | 0 | 0 | 0 | 0 |
| Student Information Checklist | 397 | 96 | 395 | 100 | 396 | 100 | 206 | 60 |

N/A - Not Applicable

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In summary, West Virginia complied with the major Special Emphasis project regulations, with two exceptions. The project failed to move beyond the administrative levels in the area of program planning and failed to offer full support to the evaluation study requirements.

## Special Features

The instructional program at this Special Emphasis site was based upon the diagnosis of student strengths and weaknesses through the use of the Wisconsin Design. The implementation of this system provided a firm basis for operationalizing a diagnostic-prescriptive approach to reading.

Some parent involvement in the school reading program was evident at this site. One or two parents volunteered several hours on a weekly basis. They provided enrichment activities for individual or small groups of students. However, Special Emphasis, per se, did not attract parent participation except as chaperons for weekly off-campus outings during the summer program.

## Special Circumstances

Special Emphasis at this site became a substitute program for Title I; Title I was removed from the treatment school in 1976 and was to be reinstated in 1979 at the conclusion of Special Emphasis.

Data collection efforts were hampered by communication problems between the two schools involved in the project. The comparison school principal appeared ill-disposed toward the additional burden participation placed upon his staff and toward the frequent testing to which students were subjected. According to the principal, his resentment was related to his original understanding that his school's commitment to the project was to be for 1 year only. GRC site visits and the semiannual SDRT administration seemed to take the comparison school principal by surprise. Consequent gaps in the site information and extreme delays in obtaining student demographic data caused delays in the data processing and analysis of cross site data for this study. These problems persisted throughout the study and extended to the treatment school during the final year. Here, some teachers resented being excluded from planning and operational decisions and information regarding the testing and data collection schedule.

## Summary

The strengths of the West Virginia project were the unifying character of the Wisconsin Design materials, which provided the diagnostic underpinning for the program; the central control vested in the school principal who served as project director; and the practical nature of the inservice training sessions, for which teachers received academic credit. The major drawback of Special Emphasis was the lack of comparability between the two schools. No particular weaknesses were evident in the project implementation, although the responsiveness of the project implementation, although the responsiveness of the project administration to the evaluation requirements was at times problematic. (See Appendix G.)

West Virginia's first objective, to effect statistically significant reading gains, was not investigated by the site itself. Impact measured by this study is presented in Section 5. No data were provided by the site regarding its second objective, the correction of 50% of reading skill deficiencies for each student as identified in the fall.

## CALIFORNIA

### Background

The California site is located in a predominantly blue-collar economic area, 15 miles from the center of a large bay area city. This is a stable area and the schools experience relatively little student turnover. The schools suffer from budget cutbacks, part-time administration, a lack of equipment, limited space, and all other problems often inherent in an urban school system.

California was the last Special Emphasis Project to be funded. Initiated in fall 1977, almost a year after the six other projects included in this report, it operated during the 1977-78 and 1978-79 school years. The California site was added when two of the original Special Emphasis sites were not refunded.

### Project Schools

The treatment and comparison schools in California serve similar student populations. The overwhelming majority of students are black, with a small number of white, Hispanic, and Asian students in the group. Table 4.37 provides a summary of enrollment data for school years 1977-78 and 1978-79. While most student demographics remained constant over this time period, it should be noted that a dramatic change in the percentage of students receiving free or reduced-price lunch occurred. Whereas 56% of the students in the treatment school and 59% in the comparison school fell into this category in 1977-78, the percentages changed to 37% and 70%, respectively, in 1978-79.

In 1978, average class size underwent an educationally significant change at both schools. At the project school, the number went from 28 to 31 students, at the comparison from 27 to 31. Teachers at the project school were more experienced. However, the percentage of teachers with graduate degrees at the comparison school in 1978-79 was greater than at the project school. Data summarizing staff characteristics are found on Table 4.38.

## TABLE 4.37

## ENROLLMENT CHARACTERISTICS

Site: CALIFORNIA

| School: | Special Emphasis | | Comparison | |
|---|---|---|---|---|
| Project Year: | 1977-78 | 1978-79 | 1977-78 | 1978-79 |
| Number of Students | 224 | 244 | 296 | 276 |
| By Sex: | | | | |
| Male | 55% | 57% | 54% | 52% |
| Female | 45% | 43% | 46% | 48% |
| By Racial/Ethnic Categories: | | | | |
| Black | 70% | 74% | 85% | 86% |
| White | 19% | 10% | 6% | 2% |
| Hispanic | 9% | 8% | 4% | 2% |
| Other or uncategorized | 2% | 7% | 5% | 10% |
| Students Receiving Free or Reduced-Price Lunch | 57% | 37% | 61% | 70% |
| Students for Whom English is a Second Language | 2% | 2% | 5% | 2% |
| Students Absent More Than 25% | 4% | 3% | 5% | 2% |

Rounding estimates are responsible for column totals below or above 100%.

## TABLE 4.38

## STAFF CHARACTERISTICS

Site: CALIFORNIA

| School: | Special Emphasis | | Comparison | |
|---|---|---|---|---|
| Project Year: | 1977-78 | 1978-79 | 1977-78 | 1978-79 |
| Number of Teachers | 8 | 8 | 11 | 9 |
| Teachers with Graduate Degrees | 50% | 50% | 44% | 83% |
| Average Teacher Experience | 18 yrs. | 17 yrs. | 13 yrs. | 14 yrs. |
| Average Number of Students/Class | 28 | 31 | 27 | 31 |

The two schools had similar traditional buildings; classrooms were arranged on long corridors, which were bleak and dark. At the comparison school, three classes were housed in portable buildings.

Neither school had a librarian; classroom teachers accepted the responsibility on a rotating basis.

The Classification of Teaching Practices (Table 4.39) points up a marked difference between the staffs of the two schools in 1977-78. Special Emphasis school staff tended to be more structured than comparison school teachers. Data missing from the comparison school preclude analysis for 1978-79.

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TABLE 4.39

CLASSIFICATION OF TEACHING PRACTICES

**Site :** CALIFORNIA

| Teaching Orientation | 1977-78 | | | | 1978-79 | | | |
|---|---|---|---|---|---|---|---|---|
| | Special Emphasis | | Comparison | | Special Emphasis | | Comparison | |
| | N | %* | N | %* | N | %* | N | %* |
| **Diagnostic Approach** | | | | | | | | |
| Diagnostic-Prescriptive | 3 | 43 | 5 | 45 | 6 | 86 | DATA MISSING | |
| Eclectic[†] | 4 | 57 | 5 | 45 | 1 | 14 | | |
| Whole Class | 0 | 0 | 1 | 10 | 0 | 0 | | |
| **Management Style** | | | | | | | | |
| Structured | 5 | 71 | 4 | 36 | 4 | 57 | DATA MISSING | |
| Eclectic[†] | 2 | 29 | 6 | 55 | 3 | 43 | | |
| Flexible | 0 | 0 | 1 | 8 | 0 | 0 | | |

[*] Based on the number of classroom teachers responding.

[†] The designation "Eclectic" indicates a teaching orientation which combines elements from both approaches or styles.

The basic reading programs in treatment and comparison schools were similar. Teachers used the Lippincott, and Holt, Rinehart, Winston basal reading series proceeding from one level to the next as described by the texts' authors. In 1976, the Lippincott skill mastery record keeping system was introduced which was used for all students in both schools. This management system tracked student progress and was a tool which directed teacher instruction.

The treatment and comparison schools were eligible for and received Title I services. A Title I reading specialist was assigned to each building. Both specialists conducted similar programs. Title I students spent 2 hours each week away from their regular classes for small group instruction in reading. There was a disparity in the number of Title I aides assigned to each school. Eleven Title I aides served the treatment school, one served the comparison school.

## The Special Emphasis Program

The particular objectives of the California program as reported by the project director were:

- To provide reading instruction for all students in grades 1 and 2 and to those students in grades 3 through 6 who are reading below grade level.
- To familiarize the community (especially parents) with the Special Emphasis Program.
- To encourage parent participation in the project and to provide them with techniques to use at home to improve their children's reading skills.
- To improve reading instruction competencies of classroom teachers.

### Project Staff

The Special Emphasis Project was headed by the reading supervisor of both the treatment and comparison schools. In addition to serving as project director, she was responsible for supervising the reading programs and Title I programs at the two schools. All these responsibilities were administered from her office located at the project school. A full-time secretary provided clerical and administrative assistance for the project director.

Two reading specialists and one reading teacher were employed by the Special Emphasis Project. Reading specialists were responsible for the selection of objectives for individual students, instruction, testing and assessment, and training aides. In collaboration with the project director, they planned and conducted inservice training and participated in making decisions regarding the basic approach to reading instruction.

One full-time aide was assigned to Special Emphasis. In assisting the reading specialists, she prepared materials and conducted instructional follow-up activities with students.

### The Special Emphasis Treatment

Reading specialists worked in a classroom/lab which was designated for Special Emphasis instruction and periodically in the regular classroom. First and second grade students received 1 hour per day of reading instruction by reading specialists. Planning between the specialists and classroom teachers took place on a weekly basis, and the reading specialists and classroom teachers worked together developing materials to aid student learning.

Special Emphasis staff serving grades 3 through 6 worked with small groups of students in the specialist's classroom. Students reading below grade level reported to the specialist's room daily for a 30-minute period. Regular classroom teachers and specialists communicated weekly to exchange plans and note progress.

Table 4.40 indicates the percentage of students enrolled in each grade who were served by Special Emphasis.

### TABLE 4.40

### TREATMENT GROUP SIZE BY GRADE LEVEL*

Site: CALIFORNIA

| | Project Year 1977-78 | | Project Year 1978-79 | |
|---|---|---|---|---|
| | Total Enrollment | % Served By Special Emphasis | Total Enrollment | % Served By Special Emphasis |
| Grade 1 | 39 | 36 | 36 | 100 |
| Grade 2 | 39 | 49 | 43 | 100 |
| Grade 3 | 32 | 41 | 42 | 31 |
| Grade 4 | 30 | 40 | 42 | 43 |
| Grade 5 | 33 | 67 | 41 | 39 |
| Grade 6 | 30 | 63 | 40 | 45 |

*Based on Experimental School Principal Questionnaire.

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## Use of Materials

The primary focus of this Special Emphasis Program was the underachiever in reading. In serving these students, remedial instruction for students reading below grade level and corrective instruction for students deficient in specific skills were provided. The instructional resources and approaches employed were: audiovisual kits and programmed materials, games, workbooks, silent reading periods, learning centers, and interest centers. Specialists and aides geared their instruction to small groups of students.

## Inservice Training Program

The inservice training program was designed by the project director and one of the reading specialists to meet specified project needs. The inservice training was conducted by the project director and the reading specialist for classroom teachers and aides. The teachers and aides received instruction in curriculum development, diagnostic-prescriptive teaching, individualized instruction, reading in the content area, preparation of support materials, and reading assessment. Of the teachers and aides involved in the inservice training, 83% found it to be helpful.

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## Summer Program

The passing of Proposition 13 resulted in the delayed start-up of the California site's summer program in 1978. A 15-day summer program for approximately 40 children was held. The 3-hour class day was divided into two 75-minute instructional periods--one for structured reading activities, the other for interdisciplinary language arts activities. A 30-minute break between periods was provided.

Primary objectives of the program were:

- To assess children's reading needs.
- To increase, through counseling sessions, student awareness of individual strengths and weaknesses and motivate students to assume responsibility for improvement in weak areas.
- To inform parents of teaching techniques and encourage them to become more involved in their children's reading.

The program was staffed by a project director, three reading specialists, and two aides who assisted in the structured reading sessions. Two volunteers worked as a tutor and as a supervisor during the 30-minute recess.

Since emphasis was placed on multisensory activities such as oral language and integrated language arts, materials were locally developed by teachers and pupils. As a supplement, teachers made use of materials produced by Lippincott (Superbooks) and Holt, Rinehart, Winston.

The project director and reading specialists informally shared their ideas and concerns on a daily basis. They attempted to key the summer program with the regular school-year program through the use of the school's basal series management system.

In 1979, the California summer program had the same format and schedules as in 1978. Program objectives were modified to include:

- Continuation of the school-year program.
- Maintaining student reading skills developed during the school year.
- Increasing student reading vocabulary and comprehension skills.

The summer staff in 1979 included three reading specialists, one full-time aide, one half-time aide, and two adults who served as volunteer aides.

A Title I summer reading clinic operated simultaneously with the Special Emphasis summer program. Students enrolled in the Special Emphasis program had the option of joining the Title I clinic after their program's conclusion. Students from the comparison school participated in the Title I summer reading program, contrary to Special Emphasis regulations.

A summary of Special Emphasis summer program statistics is found in Table 4.41.

Compliance with Special Emphasis Guidelines

A staff of two reading specialists and one reading teacher served the Special Emphasis school. During project year 1977-78, this site did not serve all students in grades 1 and 2. The minimum instructional time in reading was exceeded. A summer program was operated in 1978 and 1979—the 2 years in which this site was funded, although students from the comparison school were included in 1979. Teachers indicated that inservice training was available. Participation in program planning did not extend beyond the staff. Activities to stimulate interest in reading which included staff, student, and parent participation were not developed. A skill mastery record keeping system which also included diagnostic testing was instituted. The student body at each school was well matched until a change in student SES occurred

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## TABLE 4.41

## SUMMER PROGRAM SUMMARY

Site: CALIFORNIA

| | Summer 1978 | Summer 1979 |
|---|---|---|
| Program Duration | | |
| Weeks | 3.0 | 3.0 |
| Hours per day | 3.0 | 3.0 |
| Instructional hours in reading and reading-related activities (hours per day) | 2.5 | 2.5 |
| Total School Enrollment | 224 | 244 |
| Summer School Enrollment | 40 | 68 |
| Percent of Total Enrollment | 18 | 28 |
| Teacher/Adult-Student Ratio | 1:8 | 1:15 |
| Staff | | |
| Reading Specialists | 3 | 3 |
| Teachers | 0 | 0 |
| Aides | 2 | 1.5 |
| Librarians | 0 | 0 |
| Gym/Art Teacher | 0 | 0 |
| Volunteers* | 2 | 2 |

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*Volunteers not included in computing Teacher/Adult-Student Ratio.

in project year 1978-79. Disparate levels in service were also noted to compromise the integrity of treatment and comparison school matchability. Table 4.42 indicates the response rates for the evaluation study instruments at this site.

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## TABLE 4.42

### EVALUATION QUESTIONNAIRE RESPONSE RATES (BY RESPONDENT GROUP)

Site: CALIFORNIA

| | 1977-78 | | | | 1978-79 | | | |
|---|---|---|---|---|---|---|---|---|
| | Special Emphasis | | Comparison | | Special Emphasis | | Comparison | |
| | Number of Respondents | % of Population | Number of Respondents | % of Population | Number of Respondents | % of Population | Number of Respondents | % of Population |
| Project Director | 1 | 100 | N/A | | 0 | 0 | N/A | |
| Principal | 0 | 0 | 1 | 100 | 1 | 100 | 1 | 100 |
| Teacher | 6 | 75 | 9 | 82 | 7 | 88 | 5 | 55 |
| Reading Specialist | 4 | 100 | 0 | 0 | 3 | 75 | 0 | 0 |
| Classification of Teaching Practices: | | | | | | | | |
| Teachers | 7 | 88 | 11 | 100 | 7 | 88 | 1 | 11 |
| Reading Specialists | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Librarian | N/A | | N/A | | N/A | | N/A | |
| Student - Grade 3 | 30 | 94 | 52 | 100 | 0 | 0 | 24 | 47 |
| Student - Grades 4-6 | 91 | 98 | 145 | 96 | 73 | 59 | 81 | 52 |
| Parent | 141 | - | 159 | - | 0 | 0 | 44 | - |
| Student Information Checklist | 203 | 91 | 290 | 98 | 212 | 87 | 110 | 40 |

N/A = Not Applicable

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Special Emphasis, as it was envisioned in the project regulations, was never fully implemented at the California site.

### Special Features

In fall 1977, the California site adopted the Lippincott management system to track mastery of reading skills. This system served as a tool to identify students needs and to guide instruction. It was also the basis of interaction between specialists and classroom teachers. Teachers plotted each child's skill attainment and, in conjunction with specialists, developed a plan for meeting each child's needs.

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The site reported that Special Emphasis funds provided for the part-time employment of a school psychologist. It was felt that "the needs of the whole child" could best be met by such professional services. However, according to USOE's Contracts Office, funds for a psychologist were not approved.

## Special Circumstances

Over the 2-year course of this program, it was difficult for the evaluation team and the USOE program officer to determine precisely what constituted Special Emphasis at the California site. The inability of project staff to distinguish between Special Emphasis and Title I offerings evinced a lack of understanding or agreement with the Special Emphasis guidelines. It appeared to the study team that the information regarding project implementation was continually changing. Evaluation questionnaires provided contradictory information and, on more than one occasion, they were returned blank or only partially complete.

Other circumstances influencing the study at this site included the following:

- A change in program design between year 1 and 2. Strictly a pull-out program during year 1, Special Emphasis added an in-class component during year 2.
- The project director was a significant presence in the treatment school. Her commitment of time, materials, encouragement, and direct guidance contributed to strong rivalry between the treatment and comparison schools.
- The passage of Proposition 13 in California had a demoralizing effect on the teaching staff. Staff cutbacks did occur, and the average class size increased significantly. Proposition 13 caused delay in the scheduled summer program in 1978.
- Special Emphasis did not serve all those students it was intended to serve.

The comparison school teachers were not fully receptive to the evaluation team. Some of the problems seemed to result from the fact that both the treatment and comparison schools were administered by the same individuals. The principal and reading supervisor served both. By admission, these individuals favored the treatment school and spent more time there, thus appearing to leave the comparison school without strong leadership.

## Summary

The project director at the California site had multiple roles in both the experimental and control schools. In addition to her role in Special Emphasis, she was the reading supervisor and Title I program director for both schools. Title I and Special Emphasis appeared to be merged; distinction between the two programs was difficult, if not impossible, to detect. According to the data supplied by the California site, Special Emphasis was not serving all first and second graders--at least in 1977-78. Significant features of Special Emphasis appeared to be the additional staff and the encouragement and support provided by the project director.

The first objective set by the California site, which was also a program regulation, was not fully operationalized during the 1977-78 school year. All first and second graders were not served by Special Emphasis Project staff. The second and third objectives were purported to have been accomplished. However, the study team found no evidence of parent awareness efforts or changes in parent participation nor did staff questionnaire responses substantiate this claim. With respect to the fourth objective, improving reading instruction competencies, GRC reviewed questionnaire data for indications of change and reports on this in Section 5.

## CROSS SITE ANALYSIS

The preceding profiles of the seven Special Emphasis projects highlighted each site's distinctive features and described how Special Emphasis was implemented and integrated into the regular school programs. The comparability and variability among the seven project sites will be discussed in the following subsections. This review of site and program characteristics was conducted to determine the comparability between treatment and comparison schools, to examine the diversity and representativeness of the projects nationwide, and to identify the potential influence of these characteristics upon project outcomes. The aspects of Special Emphasis projects which will be summarized in the following subsections are:

- Participant Characteristics
- Staff Characteristics
- Special Emphasis Implementation
- Project Administration

### Participant Characteristics

Data for project year 1977-78 showed that, across all sites, males comprised 52% of the Special Emphasis students and 50% of the students in the comparison schools. In 1978-79, the percentages reflected a similar mix.

With respect to racial/ethnic composition, blacks comprised 45%, Hispanics 11%, and whites 43% of the Special Emphasis schools. The comparison school counterparts were 43% black, 9% Hispanic, and 47% white. West Virginia had an almost all white population, Michigan almost all black, and Louisiana approximately equal numbers of white and black students. Differences between schools were found in Tennessee where the Special Emphasis school was 26-29% white vs. 47-48% of the comparison school. In California, the comparison school had approximately 10% more minority enrollment. Otherwise, Special Emphasis and comparison schools within sites were comparable with respect to racial/ethnic composition.

Because studies of educational interventions have shown a close relationship between the SES of students and their academic performance, GRC documented the incidence of students receiving free or reduced-price lunch as an index of SES level. It should be noted that the voluntary enrollment in subsidized food programs and the varying vigor of recruitment efforts limit the reliability of this measure. However, data for project year 1977-79 showed low-SES students ranged from 39% in Texas to 81% in Michigan and Tennessee. SES composition within sites was balanced in Michigan, Ohio, and Texas. In Louisiana, Tennessee, and West Virginia, the Special Emphasis schools had greater percentages of low-SES students; in California, the comparison school had a greater percentage of low-SES students.

Another factor believed to influence treatment outcomes was student mobility and absenteeism. Students missing 25% or more of the school year ranged from 1% in Louisiana to 11% in Ohio. GRC found that the combined factors of absenteeism and student transfers accounted for significant sample attrition. Only in Ohio was there a difference in degree of absenteeism between the Special Emphasis (5%) and the comparison school (11%). One measure of the influence which mobility and absenteeism had on the data is provided in Appendix B where the differences between students with the pre- or posttest only are summarized in the tables.

Another characteristic deemed important was the extent to which the participant population included students with learning disabilities. Students officially recognized as having learning disabilities/problems were excluded from the impact analysis.[1] Appendix A contains tables which illustrate the numbers of such students eliminated from this study. The highest numbers of students with learning disabilities were reported in Louisiana and Texas. Elimination of such students from the study had the effect that (1) students not capable of functioning on a reading test were not tested, and (2) if one school were operating under broader identification criteria, that school may have eliminated from the study a greater proportion of low achieving students than did the other schools. Differences in percentages of students in the experimental and comparison schools identified as having learning disabilities were noted in Louisiana, Tennessee, and Texas (in 1978-79).

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[1] A number of factors influenced the official designation of students with learning disabilities. Family objections, community mores, and the availability of special services and funds are linked to the identification of these students. Consequently, the numbers reported by each site of students removed from the impact analysis may not reflect the actual incidence of students who had learning problems.

## Staff Characteristics

Within the context of this study, school staff members with the greatest influence over the performance of students were thought to be the regular classroom teacher and the reading specialist. Each staff member was questioned regarding his/her academic and professional experience as well as his/her teaching practices.

### Classroom Teachers

The majority of classroom teachers had over 6 years of teaching experience; for project year 1977-78, 67% of the teachers at the treatment school and 61% at the comparison school had 6 or more years of experience. The picture changed somewhat in project year 1978-79 when 65% of the teachers at the treatment schools and 56% at the comparison schools had more than 6 years of teaching experience. Overall, teachers at the treatment schools had more experience than their counterparts. The most experienced teachers were found in California, Ohio, Louisiana, and West Virginia. It should be pointed out that the more experienced teachers were also less recently trained and may, therefore, have had less exposure to recently developed technology of teaching reading. In 1979, 39% of the teachers at the Special Emphasis schools had graduate degrees compared to 31% at the comparison schools. A majority of the teachers at both schools in the Michigan and California sites had graduate degrees.

To determine the general orientation of teachers with respect to teaching practices, GRC surveyed the teachers to determine whether they were inclined to be "diagnostic-prescriptive" in their approach, or were inclined to take a "whole-class" approach. Similarly, GRC sought to find out whether teaching methods tended to be "structured" or "flexible."[1]

In most instances, the general orientation of teachers in the treatment and comparison schools was similar. Few teachers used a whole-class approach and few teachers could be classified as flexible. In 1979, exceptions to this pattern existed in Louisiana and Texas where none of the Special Emphasis teachers followed a whole-class approach vs. 27% and 18% in the respective comparison schools.

Teaching materials used across sites and within sites were generally similar. The basal reading series was the mainstay of every institutional program. In conjunction with the basal text, skill activities--both published and teacher developed--were major resources. Table 4.43 summarizes the materials used in the respective sites. It is evident from Table 4.43 that treatment and comparison schools in each site used the same materials and management systems. Management systems were more commonly used on the first and second grade level than at grades 3 through 6. With one exception (California), the availability of equipment and materials for extending and enhancing the reading program was high. Teachers and school administrators credited Special Emphasis with having increased the variety and amount of hardware and software in general use. Utilization of these items varied from site to site. In Ohio, they played a major role in the reading program; in Louisiana, Tennessee, Texas, and West Virginia, they received moderate use; in Michigan, and California, they played a minor role.

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[1] Definitions of these terms are found in the Glossary, Appendix H.

## TABLE 4.43

## MAJOR READING RESOURCES UTILIZED

| Sites | | Basal Grades | | Management System Grades | |
|---|---|---|---|---|---|
| | | 1-2 | 3-6 | 1-2 | 3-6 |
| Louisiana: | Special Emphasis | H | H | PT,H | PT,H |
| | Comparison | H | H | PT,H | PT,H |
| Michigan: | Special Emphasis | C | C,H | D,X | |
| | Comparison | C | C,H | D,X | |
| Ohio: | Special Emphasis | H | H,B | X | X |
| | Comparison | H | H,B | X | X |
| Tennessee: | Special Emphasis | H,D | H,D | H,D | H |
| | Comparison | H,D | H,D | H,D | H |
| Texas: | Special Emphasis | H | H | X | X |
| | Comparison | H | H | X | X |
| West Virginia: | Special Emphasis | H, A | H ,A | WD,H | WD,H |
| | Comparison | H,C | H | H | H |
| California: | Special Emphasis | L | L,C | L | L |
| | Comparison | L | L,C | L | L |

KEY:
A = American Book
B = Harcourt Brace
C = One or more of the following: Bank Street Reader; Holt, Rinehart, Winston
D = DISTAR
H = Houghton Mifflin
L = Lippincott
PT = Precision Teaching
WD = Wisconsin Design
X = School/district-developed

## Reading Specialists--Characteristics and Utilization

With the exception of Ohio, reading specialists were veteran teachers. However, most had limited experience in the role of reading specialists. Special Emphasis, together with increasingly stringent state requirements for reading instruction, may have been responsible for many of these teachers being employed as reading specialists. Only in West Virginia was there an indication that the staff had in-depth experience as reading specialists. Table 4.44 summarizes the qualifications of the reading specialists from the seven sites.

Special Emphasis reading specialists provided instruction in different settings across the sites and within each site:

- In Louisiana, Special Emphasis instruction was provided for all students grades 1 through 6 in the specialist's classroom.
- Tennessee also offered instruction by reading specialists to all students, but placed the specialists in the regular classroom with the classroom teacher. Additional remedial attention was provided in the specialist's classroom to students in need of special help.
- Michigan served all first and second graders in their regular classrooms and those third through fifth/sixth graders having reading problems in a reading room.
- Texas followed this same format.
- Reading specialists in Ohio, West Virginia, and California taught in their own classrooms. In California, students came to the specialists in small groups; in Ohio and West Virginia, students in grades 3 through 6 received instruction in groups numbering 9 or more, with first and second graders served as class units in the specialist's classroom.

Table 4.45 summarizes the ways in which reading specialists were deployed across all projects. In four of the sites, specialists worked

## TABLE 4.44

## QUALIFICATIONS OF READING SPECIALISTS

| Site | No. of Specialists* | | Years Teaching Experience (mean) | | Years as Reading Specialist (mean) | | % with Graduate Degree | | % Meeting USOE Guidelines as: | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Reading Teacher | Reading Specialist | Reading Teacher | Reading Specialist |
| | 1977-78 | 1978-79 | 1977-78 | 1978-79 | 1977-78 | 1978-79 | 1977-78 | 1978-79 | 77-78 | 78-79 | 77-78 | 78-79 |
| Louisiana | 5 | 5 | 12 | 16 | 4 | 5 | 60 | 75 | 0 | 100 | 0 | 100 |
| Michigan | 6 | 7 | 8 | 9 | 3 | 4 | 100 | 100 | 50 | 50 | 0 | 100 |
| Ohio | 2 | - | 3 | - | 2 | - | 0 | - | 100 | 0 | - | - |
| Tennessee | 6 | 6 | 8 | 9 | 4 | 6 | 100 | 100 | 0 | 100 | 0 | 100 |
| Texas | 7 | 7 | 7 | | 2 | | 100 | | 17 | 83 | 0 | 100 |
| West Virginia | 3 | 3 | 20 | 21 | 8 | 10 | 33 | 33 | 66 | 33 | 66 | 33 |
| California | 4 | 4 | 15 | 12 | 2 | 3 | 100 | 100 | 33 | 66 | 33 | 66 |
| All Sites | 33 | 32 | 10 | | 4 | | | | 38 | 62 | 17 | 83 |

[*] Includes Title I and district reading specialists.

[-] No data is available from Ohio for project year 1978-79.

## TABLE 4.45
## DEPLOYMENT OF SPECIAL EMPHASIS READING SPECIALISTS

| | Special Emphasis Instruction | | |
|---|---|---|---|
| | Pull-Out* | | Within Classroom |
| Site | Whole Class Groups (Grades) | Individual/ Small Group (Grades) | (Grades) |
| Louisiana | 1,2,3,4,5,6 | | |
| Michigan | | 3,4,5/6 | 1,2 |
| Ohio | | 1,2,3,4,5,6 | |
| Tennessee | | 1,2,3,4,5,6 | 1,2,3,4,5,6 |
| Texas | | 3,4,5 | 1,2 |
| West Virginia | 1,2 | 3,4,5,6 | |
| California | | 1,2,3,4,5,6 | 1†,2† |

*"Pull-out" refers to the practice of removing students from the regular classroom setting for a period to receive program treatment.

†Occasionally deployed in this manner.

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worked in the regular classroom with the classroom teacher--unlike most compensatory or intervention programs which remove (or "pull-out") students from the regular classrooms for special instruction.

While the settings and groupings in which reading specialists worked varied, instructional materials utilized by these reading specialists tended to follow a general pattern. Specialists conducting the basic reading instruction relied on a basal reading series as did the regular classroom teachers. Specialists providing remedial instruction relied upon teacher developed as well as commercial skill activities. While instructional kits were seldom mentioned as a resource, the study team saw such materials in use at most sites.

Special Emphasis Implementation

Before attempting to assess the effect of Special Emphasis, it is first necessary to assess the implementation of the respective projects in light of Congressional and USOE specifications. Briefly, the major requirements were:

- Employment of reading specialists or reading teachers.
- Special Emphasis instruction for all first and second grade students.
- Special Emphasis instruction for all third through sixth graders reading 1 or more years below grade level.
- A minimum of 40 minutes of reading instruction per day.
- An intensive summer reading program.
- Preservice and inservice training for Special Emphasis staff.
- Broad-based participation in program planning.
- Establishment of reading skill mastery record keeping system.
- Comparable treatment and comparison schools.

The data compiled on each of the seven Special Emphasis projects were reviewed and compared to these requirements.[1] Table 4.46 presents the results of this review. A score of "1" in each cell of the table indicates that the specified criteria had been implemented. A "2" indicates implementation beyond minimum standards, and a "0" indicates lack of compliance. Thus, a Special Emphasis project meeting all USOE guidelines would have an overall minimum total of 9, and no "0" cells on Table 4.46. Individual projects may have a total score exceeding 9, and not be in compliance.

A brief summary of the implementation of each of these components follows.

### Reading Specialists

All Special Emphasis projects employed reading specialists, or reading teachers,[2] in conformity with USOE regulations. In addition to Special Emphasis reading specialists at the treatment school, all sites except West Virginia and Ohio had other reading specialists on their staffs which were funded by Title I, ESAA, or the school district.

### Special Emphasis Instruction

Special Emphasis instruction was provided to all first and second grade students in each site except in Ohio and California. (No reasons for lack of compliance were given.) Special Emphasis instruction for students grades 3 through 6 who were 1 or more years below level was apparently provided in all sites except Michigan, where, by agreement with USOE the lowest achieving 20% of students grades 3 through 6 were served. As noted, there were no across-site, uniform measures or

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[1] In addition, project guidelines required sites to: provide diagnostic testing to determine skill deficiencies, conduct periodic testing to measure achievement, and establish a comprehensive reading program. Each site met these requirements; however, because the regulations specify that these features be implemented "to the extent possible," no cross-site comparisons have been made. Similarly, compliance with other requirements which were part of the contract agreements (e.g., no vacation school for comparison school students) are noted in the site-specific descriptions, but are not included in the cross-site analysis.

[2] These terms are defined in the Glossary, Appendix H.

## TABLE 4.46

## IMPLEMENTATION OF SPECIAL EMPHASIS REQUIREMENTS

| | LA | MI | OH | TN | TX | WV | CA |
|---|---|---|---|---|---|---|---|
| 1. Employment of reading specialists/teachers | 2 | 2 | 1 | 2 | 2 | 1 | 2 |
| 2. Treatment of all first and second graders | 2 | 2 | 0 | 2 | 2 | 2 | 0 |
| 3. Treatment of all third through sixth graders one or more years below grade level | 2 | 0 | 1 | 2 | 1 | 1 | 1 |
| 4. Minimum of 40 minutes of reading instruction | 2 | 0 | 1 | 2 | 1 | 1 | 1 |
| 5. Provision of summer reading program | 2 | 1 | 1 | 2 | 2 | 1 | 1 |
| 6. Provision of preservice/inservice training | 1 | 1 | 1 | 2 | 2 | 2 | 1 |
| 7. Broad-based program planning participation | 1 | 0 | 1 | 2 | 1 | 0 | 0 |
| 8. Establishment of skill mastery record keeping system | 1 | 1 | 1 | 2 | 2 | 2 | 1 |
| 9. Comparable treatment and comparison schools | 1 | 2 | 1 | 0 | 1 | 1 | 1 |
| TOTAL | 14 | 9 | 8 | 16 | 14 | 11 | 8 |

KEY: 2 = Highly developed or implemented
1 = Met the minimum requirements
0 = Not implemented, out of compliance

procedures for selecting students grades 3 through 6 for participation in Special Emphasis, nor for tracking them following participation.

The 40-minutes per day required minimum of reading instruction was met by all but the Michigan site. In this regard, it should be noted that the Special Emphasis regulations did not specify how much reading instruction was to be provided by the reading specialist--only that each student receive a minimum of 40 minutes per day and 20 to 30 minutes of teacher-directed instruction. Table 4.47 provides a summary of the amount of time devoted to Special Emphasis and other reading instruction in the respective schools.

Many of the treatment schools provided varying amounts of reading instruction at individual grade levels. As Table 4.47 indicates, in some sites reading was integrated into a Language Arts time block for which the schools were unable to specify a precise amount of time for each of the subjects included during the period.

### Summer Reading Program

All sites designed and implemented summer schools which provided intensive reading instruction along with complementary multi-activity experiences. While the Michigan and California program operated under restricted circumstances during one of the summers, the study team was impressed with the amount of creativity and enthusiasm engendered by project staff in each of the projects. In 1978, attendance at the summer programs ranged from 18% in California to 67% in Tennessee. Louisiana and Tennessee were the only sites to attract more than half of the total school enrollment. The average participation rate across all sites was 37.5% in 1978 and 35.6% in 1979. Some of the more interesting and engaging activities provided by the projects were:

- Field trips to airports, bakeries, zoos, and a variety of business-industry-recreation settings which provided children with experiences which were used in language-experience exercises related to reading instruction.

# TABLE 4.47

## INTENSITY OF READING INSTRUCTION

| Site | Experimental School | | | | Comparison School | |
|---|---|---|---|---|---|---|
| | Grade | Special Emphasis (Minutes) | Grade | Regular Reading Instruction (Minutes) | Grade | (Minutes) |
| Louisiana | 1 | 90 | 1 | 30 | 1 | 90 |
| | 2 | 60 | 2 | 30 | 2 | 90 |
| | 3 | 60 | 3 | 30 | 3 | 90 |
| | 4-6 | 60 | | | 4-6 | 75 |
| Michigan | 1-2 | 70 | | | 1-2 | 80† |
| | 3-5 | 30* | 3-5 | 30 | 3-5 | 80† |
| Ohio | 1-2 | 40* | 1 | 120 | 1-2 | 80 |
| | 3-6 | 30* | 2 | 90 | 3-6 | 60 |
| | | | 3-6 | 60 | | |
| Tennessee | 1 | 45,30* | 1-2 | 45 | 1-6 | 60 |
| | 2 | 45,35* | 3 | 45 | | |
| | 3 | 45,35* | 4 | 60 | | |
| | 4-6 | 45,35* | 5 | 45 | | |
| | | | 6 | 60 | | |
| Texas | 1-2 | 80 | | | 1-2 | 90 |
| | | | | | 3 | 75 |
| | 3-5 | 30* | 3-5 | 60 | 4-5 | 60 |
| West Virginia | 1-2 | 50 | 1-2 | 70† | 1-2 | 150† |
| | 3-4 | 40* | 3-4 | 80† | 3 | 150† |
| | 5-6 | 30* | 5-6 | 40† | 4-6 | 120† |
| California | 1-2 | 60 | | | 1-2 | 50 |
| | 3-6 | 30* | 3 | 60 | 3-6 | 50 |
| | | | 4-6 | 50 | | |

[*] Selected students.

[†] Includes other Language Arts such as spelling, grammar, and writing.

- An inexpensive book distribution on an unspecified day each week--designed to stimulate attendance at summer school and the students' interest in book reading.
- Gym and library activities which were integrated into the reading curriculum by presenting learning activities dealing with eye-hand coordination; following directions; worlds of fantasy and creativity; and the relationships between music, dance, song, and literature.

Preservice and Inservice Training

Preservice training for teacher and clerical aides and inservice training for project staff and classroom teachers were held in all the sites. Participation was voluntary except in Tennessee, Texas, and California. Programs were designed and conducted by project staff except in West Virginia. Three projects, Tennessee, Texas, and West Virginia, utilized the services of an outside consultant; three of the projects offered graduate credits for participation (Louisiana and Michigan in 1977, and West Virginia in 1978 and 1979). As a result of participation in these sessions, some teachers continued graduate course work and received graduate degrees. All sites had courses which focused on diagnostic-prescriptive approaches to teaching reading and several involved the development of materials for teaching reading.

Broad-Based Planning

As shown on Table 4.46, only four of the seven sites undertook what might generally be called broad-based planning for Special Emphasis instruction. At the remaining three sites, planning of the project was limited to school district officials, the project director, the school principal, and the reading specialists. Only at the Tennessee site was there evidence of the participation of community representatives and parents in the planning of the Special Emphasis program. Only three of the sites (Louisiana, Michigan, and West Virginia) identified measurable objectives for Special Emphasis. For the most part, objectives identified by local projects were process rather than outcome objectives--a factor which may have limited the precision and direction of the implementation.

### Skill Mastery Record Keeping Systems

All Special Emphasis sites established skill mastery record keeping systems for tracking student progress in reading skills and charting the diagnostic-prescriptive approach. In California, the system in the basal reading series was used. In others, commercial reading management systems were used such as DISTAR (Tennessee and Michigan), Precision Teaching (Louisiana), or Wisconsin Design (West Virginia); in some sites (Michigan, Ohio, Texas), locally-devised, district-wide systems were used. In several instances, management systems were in place prior to Special Emphasis.

### Comparability of Special Emphasis and Comparison Schools

Aside from the provisions for broad-based planning, the requirement for comparable treatment and comparison schools was most problematic. Only one of the Special Emphasis sites, Michigan, had treatment and comparison schools which were truly comparable with respect to standardized reading scores, size, demographics, instructional program, staff, and facilities. Five of the sites--Louisiana, Ohio, Texas, West Virginia, and California--were generally comparable. The Tennessee schools lacked comparability with respect to student demographics, standardized test scores, teacher experience, instructional programs, and school facilities.

## Project Administration

Project administration involved different combinations of personnel at each site, including LEA administrators, the Special Emphasis project director, the treatment school principal, and one or more of the reading specialists.

Special Emphasis project directors represented a diverse group of education professionals. All seven had many years of experience in the field of education and were in recognized positions of leadership in the district where they served as director of the Special Emphasis Project.

Time devoted by project directors to Special Emphasis ranged from 5 to 40 hours per week. This time commitment varied according to the additional job responsibilities assigned most project directors. Within the extremes of 5 and 40 hours, three project directors spent 10 hours a week and two spent 20 hours a week on Special Emphasis activities.

Four project directors were located offsite in their school district's administrative offices (Louisiana, Michigan, Tennessee, and Texas). In general, these directors provided less supervision of project personnel and less guidance for program implementation. These project directors typically assigned responsibility for ongoing project activities to an individual located at the project school--a principal or reading specialist. Offsite project directors seldom visited Special Emphasis classes. However, during their infrequent site visits they observed classes or showed visitors around. The primary functions of these directors in relation to the project reading program were to set guidelines for the conduct of the program, to provide inservice training, and to supply materials and staff.

Louisiana, it appears, was an exception to this pattern. The project director provided a great deal of direct supervision and was onsite to observe on a weekly basis. The fact that this particular project director developed the curriculum and materials used in the Title I program at these schools perhaps explains the greater degree of involvement and supervision evident at this site.

At the remaining three sites--Ohio, West Virginia, and California--which had the project director colocated with the project, the director had greater supervisory presence. Weekly visits, frequently for observation, were characteristic. Teachers and reading specialists were in unanimous agreement that these directors assumed an active role.

Project directors at all sites were responsible for establishing positive, cooperative relationships with the schools involved in the study. In the treatment schools, these relationships were nurtured through classroom/lab visits, inservice training meetings and discussions, and availability for problem solving and technical assistance. The effectiveness of the project director in establishing these relationships was reflected in teacher attitudes toward the Special Emphasis project, which will be addressed in Section 5, Project Outcomes. Of particular concern was the relationship with comparison schools. These schools received none of the programmatic benefits of the Special Emphasis Project but were burdened by the semiannual testing and data requirements. Positive relationships existed at three sites (Louisiana, Tennessee, and Texas). The comparison school's staff at these sites had a basic understanding of Special Emphasis and the role of the comparison school. They received sufficient advance notification of the evaluation team's visits, proposed activities, and data requirements. On the other hand, resistance to the study team and Special Emphasis Project staff was evident at sites where the comparison school felt uninformed. The staff at several of these schools refused to cooperate with various aspects of the study (e.g., classroom teacher administration of the SDRT, classroom observation, and questionnaire response). Lack of information and appreciation for the study was not limited to the comparison schools; similar conditions existed at some treatment schools where teachers or reading specialists were not involved in the planning of the project.

Administrative support from the LEA for the Special Emphasis projects was not strong in all sites despite the fact that each school district voluntarily sought Special Emphasis Federal funds. While there was interest expressed in the project and in improving reading instruction on a district-wide basis, Special Emphasis was clearly not an LEA priority undertaking at the majority of the sites. Two sites, Tennessee and Texas, exhibited unflagging administrative support with respect to space allocation, staffing, logistical and material support, timely decisions, and responsiveness to the requirements of the evaluation.

## CROSS SITE SUMMARY

In summary, the cross site analysis reveals the following findings:

- Special Emphasis, as a reading intervention concept, was implemented with varying objectives, staffing configurations, and instructional approaches reported in the respective sites.
- All treatment schools utilized diagnostic-prescriptive approaches to reading instruction which were based on skill mastery systems and which were introduced through in-service training sessions for teachers and reading specialists.
- Aside from the diagnostic-prescriptive approach, perhaps the most distinctive programmatic feature of Special Emphasis in four of the sites was assigning the reading specialists to teach in the regular classroom where the specialist served as role model, lead teacher, and technical resource. These sites were Louisiana, Michigan, Tennessee, and Texas.
- Implementation data with respect to the Special Emphasis Guidelines revealed compliance along all major dimensions only in Louisiana and Texas. Ohio and California failed to serve all first and second graders; Michigan failed to

serve all eligible students (grades 3-6) as well as to provide the 40 minutes of instruction. Broad-based planning was not present in Michigan, West Virginia, and California. A review of schools, programs, and student characteristics indicates broad comparability between the treatment and comparison school in each site except Tennessee.

- Administrative configurations varied from site to site. Strongest leadership appeared to be in Louisiana, Tennessee, and Texas where LEA involvement and onsite educational leadership were most evident.
- As indicated in the implementation matrix in Table 4.46, the highest degree of implementation of Special Emphasis took place in Tennessee, Louisiana, and Texas. Common characteristics among these three sites were: (1) strong LEA support, (2) onsite management and leadership, (3) educational leadership with respect to curriculum and instruction, (4) staff development which was well attended and received by the teachers, and (5) classroom teacher participation in program planning.

These site-specific findings and cross-site comparisons provide the context and the interpretive basis for the project outcomes which are described in the next section.

# SECTION 5

## PROJECT OUTCOMES

### INTRODUCTION

Three types of project outcomes are presented in this section:

- Program Impact--Results of the covariance analysis of "whole grade" cohort groups, the covariance analysis of "below mean" cohort groups, and the trend analyses of students reading 1 or more years below grade level.
- Attitudinal and Behavioral Findings--Results of the questionnaire surveys of teachers, students, and parents.
- Residual Effects of Special Emphasis--The institutionalized "carry over" of concepts, practices, and procedures in the local site after the end of program funding.

For the analysis of program impact for each site, tabular summaries are provided for the:

- Covariance analyses of "whole grade" cohort groups for project years 1977-78 and 1978-79 and the 1977-79 period. Complete data for each site are contained in Appendix E.
- Covariance analyses of "below mean" cohort groups for project years 1977-78 and 1978-79. Complete data for each site are contained in Appendix F.
- Trend analyses of students reading 1 or more years below grade level. Complete data for each site are contained in Appendix D.

The analytic results for the whole grade groups apply to only those students who comprise the analytic samples. Attention should be directed to the results of the preliminary analysis to determine whether the analytic results can be generalized to the participating student groups as a whole. In particular, confidence in the representativeness of the results will be limited by:

- Any non-comparability between the Special Emphasis and comparison groups along educationally relevant variables (as described in Section 4).
- The effects of attrition on the representativeness of the students included in the analytic sample and the representativeness of their test scores in the analysis (see Appendixes A, B, and D).
- The influence of ceiling effects as they relate to the over- or underestimation of growth in reading achievement (as documented in Appendixes C and E).

The analytic results of the below mean analysis are presented to support results for those students for whom the Special Emphasis Program was intended. Caution must be exercised in their interpretation to the extent that:

- The proportions of below mean students for the treatment and comparison groups are not equal.
- The below mean treatment and comparison groups show a preponderance of negative measurement error in the score distributions.

A further discussion of the analytic methodology is contained in Section 3, Appendix G, and Volume II.

For the analysis of attitudinal and behavioral findings, tabular summaries are provided for questionnaire surveys of teachers, parents, and students. The residual effects of Special Emphasis were documented during onsite observations and interviews with project staff and were noted in responses to specific open-ended questions on the classroom teacher questionnaire.

A discussion of each of the three types of project outcomes for each site is contained in the following subsections. A cross site summary concludes this section of the report.

## LOUISIANA

### Summary

The ANCOVA performed for the "whole grade" cohort group revealed statistically significant differences between the Special Emphasis and the comparison groups in project year 1977-78 and 1978-79 at grades 2 and 5. The ANCOVA performed for the "below mean" cohort group indicated statistically significant differences at grade 2 for 1977-78 and 1978-79 and also for grades 4, 5, and 6 in 1978-79. These differences may be more a function of the large differences in the sample sizes between Special Emphasis and comparison than any true differences between the two groups. While more students in both treatment and comparison schools tended to fall 1 or more years below level as they moved up grade levels, the Special Emphasis school did not "lose ground" as much as did the comparison school.

Teacher perceptions of their students, their peers, and the principal's reading-related attitudes and behaviors showed in both schools, but to a greater degree in the treatment school. Special Emphasis school teachers were highly supportive of the Special Emphasis Project.

The following subsections describe in detail the project outcomes for Louisiana.

### Covariance Analysis of "Whole Grade" Cohort Groups

The summary of the ANCOVA for each grade in the Special Emphasis and comparison schools in Louisiana is contained in Table 5.1, ANCOVA Impact Summary. For project year 1977-78, statistically significant differences in the adjusted posttest scaled scores were identified for grades 2 and 5. In both instances, the adjusted posttest scaled scores for the Special Emphasis group exceeded those of the comparison group. In addition, the average observed change in grade equivalent for both the second and fifth grade comparison groups was below the average growth of .6 years expected for low achieving students. The average observed change in grade equivalents for second and fifth grade Special Emphasis groups was .8 and 1.1 years, respectively.

## TABLE 5.1

## ANCOVA IMPACT SUMMARY

Site: LOUISIANA

| WHOLE GRADE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROJECT YEAR 1977-1978 | | | | | PROJECT YEAR 1978-1979 | | | | | PROJECT YEARS 1977-1979 | | | | |
| Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. | Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. | Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. |
| 2 | S.E.<br>C. | <.01 | S.E. | +0.8<br>+0.5 | 2 | S.E.<br>C. | .04 | S.E. | +0.9<br>+0.6 | 2 | S.E.<br>C. | N/A | | |
| 3 | S.E.<br>C. | N.S. | - | +1.1<br>+1.2 | 3 | S.E.<br>C. | N.S. | - | +0.9<br>+1.2 | 3 | S.E.<br>C. | .02 | S.E. | +1.8<br>+1.7 |
| 4 | S.E.<br>C. | N.S. | - | +0.5<br>+0.9 | 4 | S.E.<br>C. | N.S. | - | +0.9<br>+0.9 | 4 | S.E.<br>C. | N.S. | - | +1.9<br>+2.2 |
| 5 | S.E.<br>C. | .02 | S.E. | +1.1<br>+0.2 | 5 | S.E.<br>C. | .01 | S.E. | +0.9<br>+0.1 | 5 | S.E.<br>C. | No Analysis Possible* | | |
| 6 | S.E.<br>C. | N.S. | - | +1.0<br>+0.8 | 6 | S.E.<br>C. | N.S. | - | +1.5<br>+0.9 | 6 | S.E.<br>C. | .02 | S.E. | +2.2<br>+1.2 |

*Due to error in coding grade 4 spring 1977 SDRT.

| BELOW GRADE MEAN | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| PROJECT YEAR 1977-1978 | | | | | PROJECT YEAR 1978-1979 | | | | |
| Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. | Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. |
| 2 | S.E.<br>C. | <.01 | S.E. | +1.0<br>+0.5 | 2 | S.E.<br>C. | .02 | S.E. | >+2.1<br>+0.5 |
| 3 | S.E.<br>C. | N.S. | - | +0.8<br>+1.0 | 3 | S.E.<br>C. | N.S. | - | +1.1<br>+0.9 |
| 4 | S.E.<br>C. | N.S. | - | +0.5<br>+0.6 | 4 | S.E.<br>C. | .05 | S.E. | +0.9<br>+0.6 |
| 5 | S.E.<br>C. | N.S. | - | +0.6<br>0 | 5 | S.E.<br>C. | <.01 | S.E. | +0.4<br>+0.1 |
| 6 | S.E.<br>C. | N.S. | - | +1.1<br>+0.5 | 6 | S.E.<br>C. | .01 | S.E. | +1.0<br>+0.3 |

For project year 1978-79, a statistically significant difference in adjusted posttest scaled scores was again identified for grades 2 and 5. In both these instances, the performance of the Special Emphasis groups exceeded that of the corresponding comparison groups. The average observed change in grade equivalent was .9 years for grade 2 and grade 5 Special Emphasis groups. For the comparison groups, the average change in grade equivalent was .6 and .1 for grades 2 and 5, respectively. Attention should be directed to the presence of serious ceiling effects (refer to Tables E.1 and E.2 in Appendix E) for the grade 2 posttest scores and the grade 5 pretest scores for both the 1977-78 and the 1978-79 project years leading to an underestimate of observed change in grade equivalent for grade 2 and an overestimate of the observed change in grade equivalent for grade 5.

For the 1977-79 period, statistically significant differences in adjusted posttest scaled scores were identified for the grade 3 and grade 6 "whole grade" groups. The grade identified is the grade completed in spring 1979. For grade 3, the observed change in grade equivalent was 1.8 years for the Special Emphasis group and 1.7 years for the comparison group. For grade 6, the observed change in grade equivalent was 2.2 years for the Special Emphasis group and 1.2 years for the comparison group. It should be noted that serious ceiling effects were encountered for the grade 6 pretest (refer to Table E.3 in Appendix E) indicating that the observed change in grade equivalent is an overestimate of the true change.

## Covariance Analysis of "Below Mean" Cohort Groups

For project year 1977-78, the ANCOVA indicated a significant difference in the adjusted posttest scores for the grade 2 Special Emphasis and comparison "below mean" groups (refer to Table 5.1, ANCOVA Impact Summary). This result parallels the result for the "whole grade" analysis for grade 2 for project year 1977-78. The Special Emphasis "below mean" group had an average observed change in grade equivalent of 1.0 years compared to .8 years for the grade 2 "whole grade" group. The grade 2 comparison "below mean" group had an observed change in grade equivalent of .5 years, the same as its corresponding "whole grade" group. It should be noted (refer to Table F.1 in Appendix F) that the mean pretest scaled score for the grade 2 Special Emphasis group was substantially less than that for the grade 2 comparison group (230 vs. 273) and that the sample sizes for all Special Emphasis "below mean" groups were between 13 and 19 students.

For project year 1978-79, the ANCOVA indicated significant differences in adjusted posttest scaled scores for grades 2, 4, 5, and 6. In each instance, the performance of the Special Emphasis "below mean" group exceeded that of the corresponding comparison group. It should be noted that for the " whole grade" groups, there were similar statistically significant differences for grades 2 and 5.

## Trend Analysis of Students Reading 1 or More Years Below Grade Level

Table 5.2, Trend Analysis of Students Reading 1 or More Years Below Grade Level, combines data from Tables D.1 through D.3 in Appendix D to provide a trend analysis of the percentage of students in grade cohorts reading 1 or more years below grade level in 1977, 1978, and 1979.

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TABLE 5.2

TREND ANALYSIS OF STUDENTS READING 1 OR MORE YEARS BELOW GRADE LEVEL

Site: LOUISIANA

| | Treatment School | | | Comparison School | | |
|---|---|---|---|---|---|---|
| Grade | Spring 1977 | Spring 1978 | Spring 1979 | Spring 1977 | Spring 1978 | Spring 1979 |
| | % | % | % | % | % | % |
| 2 | 17 | 8 | 11 | 19 | 12 | 7 |
| 3 | 22 | 29 | 23 | 23 | 17 | 19 |
| 4 | 57 | 59 | 34 | 53 | 51 | 39 |
| 5 | 63 | 48 | 63 | 62 | 65 | 70 |
| 6 | 59 | 69 | 49 | 55 | 56 | 62 |
| School Total | 37 | 37 | 31 | 35 | 32 | 32 |

In almost all cases, as students progress in grade level, a larger percentage of students read more than 1 year below grade level. Over the period 1977-79, there is a decrease in the percentage of second grade students reading 1 or more years below grade level; from 17% to 11% in the treatment school and from 19% to 7% in the comparison school.

Table 5.3, Numbers of Students Reading 1 or More Years Below Grade Level, shows that overall a greater number of students tested at both points (spring to spring) were reading 1 or more years below level by the end of the project year than at the beginning of the project year. For the Special Emphasis school, there was a 5-6% increase each year from 38% to 43% in 1977-78 and from 34% to 40% in 1978-79; for the comparison schools, a 6% increase from 29% to 35% and a 9% increase from 25% to 34% in 1977-78 and 1978-79, respectively. The Special Emphasis students do not appear to be falling 1 or more years below grade as rapidly as the comparison school students.

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TABLE 5.3

NUMBERS OF STUDENTS READING 1 OR MORE YEARS BELOW GRADE LEVEL

Site: LOUISIANA

| | Treatment School | | Comparison School | |
|---|---|---|---|---|
| | Project Year | | Project Year | |
| | 1977-78 | 1978-79 | 1977-78 | 1978-79 |
| 1. Total students tested at both points[*] | 177 | 170 | 335 | 387 |
| Beginning of Project Year | | | | |
| 2. No. students tested > 1 year below grade[†] | 68 | 57 | 98 | 96 |
| 3. % of total students (line 2/line 1) | 38% | 34% | 29% | 25% |
| End of Project Year | | | | |
| 4. No. students tested > 1 year below grade[‡] | 76 | 69 | 116 | 130 |
| 5. % of total students (line 4/line 1) | 43% | 40% | 35% | 34% |

[*] Spring 1977 and spring 1978 for 1977-78
Spring 1978 and spring 1979 for 1978-79

[†] Spring 1977 for 1977-78 and spring 1978 for 1978-79

[‡] Spring 1978 for 1977-78 and spring 1979 for 1978-79

## Attitudinal and Behavioral Findings

Changes in reading-related attitudes and behaviors were investigated in 1978 and 1979. The major findings of this investigation are reported for the various response groups below.

### Teachers

- Teachers at the Special Emphasis schools reported positive reading attitudinal and behavioral change on the part of their students in 1978 and in 1979. Improvement in the attitudes of their colleagues and principal was also reported each year. (Tables 5.4 and 5.5)
- At the comparison school, a more positive change in student attitudes and behaviors and colleague and principal attitudes were reported in 1979 than 1978. (Tables 5.4 and 5.5)
- Teachers at the Special Emphasis schools reported no major problems as a result of their participation in this project. Minor concerns included the feeling that reading was emphasized at the expense of other programs and conflict between teachers and reading specialists. (Table 5.6)
- Comparison school teachers expressed considerable resentment towards the project in 1978. This abated in 1979. (Table 5.6)

### Students and Parents

- In 1979, differences were observed in reading attitudes and behaviors between the Special Emphasis and comparison schools third graders. (Table 5.7)
- In 1978 and 1979, little difference was observed in the data from fourth, fifth, and sixth graders at the Special Emphasis and comparison schools. (Table 5.8)
- In 1978 and 1979, no significant differences were noted in the Special Emphasis and comparison parent groups. (Table 5.9)

No comparisons of attitudes and behaviors of grade 3 students can be made for 1978 because student surveys were not received from the Special Emphasis schools.

## Residual Effects of Special Emphasis

While school district officials have some problem distinguishing the benefits derived from Special Emphasis from those derived from their Title I Precision Teaching System, they claimed that some of the lessons learned in Special Emphasis will be carried over in Title I. Special Emphasis as a total approach, however, will not be carried over due to the expense involved.

School principals observed that the Special Emphasis Program enhanced their teachers' instructional capability. Responding to the growing teacher concern for diagnosing skills and grouping students, all first graders will undergo diagnostic testing for placement. School staff also felt that Special Emphasis made a breakthrough in getting parents involved in signing completed worksheets.

Several project staff pointed to the potential for further carry over owing to the appointment of one of the project reading specialists to the position of curriculum coordinator for the school district.

Seventy-three percent of the teachers felt certain that Special Emphasis had influenced their performance--in individualizing approaches in focusing on specific skill development, and in the use of materials and techniques.

## TABLE 5.4

## TEACHERS' ASSESSMENTS OF ATTITUDES*

Site: LOUISIANA

School: SPECIAL EMPHASIS

| Effect<br>Teachers' Assessment of: | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Students' attitudes toward reading | 1978 | 92 | 8 | - | - | - |
| | 1979 | 91 | - | 9 | - | - |
| Teachers' attitudes toward reading instruction | 1978 | 100 | - | - | - | - |
| | 1979 | 100 | - | - | - | - |
| Principals' attitudes toward reading program | 1978 | 100 | - | - | - | - |
| | 1979 | 91 | - | - | - | 9 |

School: COMPARISON

| Effect<br>Teachers' Assessment of: | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Students' attitudes toward reading | 1978 | 43 | 19 | 5 | - | 33 |
| | 1979 | 77 | 12 | - | 12 | - |
| Teachers' attitudes toward reading instruction | 1978 | 38 | 24 | 5 | - | 33 |
| | 1979 | 65 | 23 | 4 | 4 | 4 |
| Principals' attitudes toward reading program | 1978 | 43 | 24 | - | - | 33 |
| | 1979 | 54 | 12 | - | 31 | 4 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

# TABLE 5.5

## TEACHERS' ASSESSMENTS OF STUDENT READING BEHAVIORS*

Site: LOUISIANA

School: SPECIAL EMPHASIS

| Teachers' Assessment of Student Reading Behaviors / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Time spent reading in class | 1978 | 83 | 8 | - | - | 8 |
| | 1979 | 100 | - | - | - | - |
| Time spent reading outside of class | 1978 | 58 | 17 | - | - | 25 |
| | 1979 | 82 | 9 | - | 9 | - |
| Library and/or classroom book usage | 1978 | 100 | - | - | - | - |
| | 1979 | 100 | - | - | - | - |

School: COMPARISON

| Teachers' Assessment of Student Reading Behaviors / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Time spent reading in class | 1978 | 43 | 19 | - | - | 38 |
| | 1979 | 89 | 8 | - | 4 | - |
| Time spent reading outside of class | 1978 | 33 | 24 | - | - | 43 |
| | 1979 | 58 | 4 | - | 39 | - |
| Library and/or classroom book usage | 1978 | 48 | 14 | - | - | 38 |
| | 1979 | 92 | - | - | 8 | - |

*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.6

## TEACHER CONCERNS RESULTING FROM SPECIAL EMPHASIS INVOLVEMENT*

Site: LOUISIANA

School: SPECIAL EMPHASIS

| | Year | Major Problem % | Minor Problem % | Not A Problem % |
|---|---|---|---|---|
| Teacher dissatisfaction with project objectives | 1978 | | 8 | 84 |
| | 1979 | | 9 | 91 |
| Conflict between project objectives and other district objectives | 1978 | | | 92 |
| | 1979 | | | 91 |
| Teacher feelings that reading is emphasized at expense of other programs | 1978 | | 25 | 67 |
| | 1979 | | 9 | 82 |
| Conflict between teachers and reading specialists | 1978 | | 8 | 84 |
| | 1979 | | 18 | 82 |

School: COMPARISON

| | Year | Major Problem % | Minor Problem % | Not A Problem % |
|---|---|---|---|---|
| Teacher resentment of administering tests to students not benefiting from the project | 1978 | 24 | 29 | 24 |
| | 1979 | 8 | 12 | 77 |
| Teacher resentment of extra work without receiving new materials or other support | 1978 | 29 | 24 | 24 |
| | 1979 | 15 | 35 | 43 |
| Parental complaints about testing | 1978 | | 5 | 71 |
| | 1979 | | 15 | 77 |
| Teacher feelings that reading is emphasized at expense of other programs | 1978 | 14 | 10 | 43 |
| | 1979 | 4 | 19 | 69 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.7

## STUDENT ATTITUDES AND BEHAVIORS REGARDING READING - GRADE 3*

**Site:** LOUISIANA

**Year:** 1978

| | School | Yes % | Some-times % | No % |
|---|---|---|---|---|
| Reading is fun | Special Emphasis | - | - | - |
| | Comparison | 50 | 46 | 3 |
| I like to read during my free time | Special Emphasis | - | - | - |
| | Comparison | 59 | 36 | 4 |
| I like my reading class | Special Emphasis | - | - | - |
| | Comparison | 63 | 25 | 11 |
| I read only when I have to | Special Emphasis | - | - | - |
| | Comparison | 55 | 22 | 22 |

**Year:** 1979

| | School | Yes % | Some-times % | No % |
|---|---|---|---|---|
| Reading is fun | Special Emphasis | 84 | 14 | 2 |
| | Comparison | 76 | 13 | 3 |
| I like to read during my free time | Special Emphasis | 34 | 52 | 14 |
| | Comparison | 60 | 25 | 6 |
| I like my reading class | Special Emphasis | 48 | 39 | 14 |
| | Comparison | 63 | 19 | 9 |
| I read only when I have to | Special Emphasis | 21 | 52 | 27 |
| | Comparison | 52 | 8 | 31 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.8

## STUDENT ATTITUDES AND BEHAVIORS REGARDING READING - GRADES 4-6*

Site: LOUISIANA

Year: 1978

| Reading Attitudes | School | Yes % | Some-Times % | No % |
|---|---|---|---|---|
| Do you like to read? | Special Emphasis | 54 | 40 | 4 |
| | Comparison | 49 | 48 | 2 |
| Do you read better this year than last year? | Special Emphasis | 73 | 19 | 6 |
| | Comparison | 79 | 4 | 17 |
| **Reading Habits** | **School** | **0 %** | **1-5 %** | **6+ %** |
| How many hours do you spend reading outside of school per week? | Special Emphasis | 25 | 61 | 14 |
| | Comparison | 23 | 56 | 21 |
| How many books have you read during the past month? | Special Emphasis | 11 | 36 | 53 |
| | Comparison | 7 | 44 | 49 |

Year: 1979

| Reading Attitudes | School | Yes % | Some-Times % | No % |
|---|---|---|---|---|
| Do you like to read? | Special Emphasis | 54 | 42 | 4 |
| | Comparison | 50 | 44 | 2 |
| Do you read better this year than last year? | Special Emphasis | 94 | 1 | 5 |
| | Comparison | 89 | 3 | 8 |
| **Reading Habits** | **School** | **0 %** | **1-5 %** | **6+ %** |
| How many hours do you spend reading outside of school per week? | Special Emphasis | 25 | 57 | 18 |
| | Comparison | 13 | 70 | 17 |
| How many books have you read during the past month? | Special Emphasis | 5 | 35 | 60 |
| | Comparison | 6 | 18 | 76 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

TABLE 5.9

SUMMARY OF PARENT SURVEY*

**Site:** LOUISIANA

**Year:** 1978

| | School | Yes % | No % | Cannot Say % |
|---|---|---|---|---|
| Does your child share books with you or your family? | Special Emphasis | 71 | 23 | 5 |
| | Comparison | 75 | 19 | 4 |
| Does the school set up parent/teacher conferences? | Special Emphasis | 30 | 52 | 16 |
| | Comparison | 30 | 55 | 12 |
| Have you worked as a volunteer in your child's school this year? | Special Emphasis | 4 | 77 | 2 |
| | Comparison | 9 | 76 | 2 |

**Year:** 1979

| | School | Yes % | No % | Cannot Say % |
|---|---|---|---|---|
| Does your child share books with you or your family? | Special Emphasis | 82 | 15 | 2 |
| | Comparison | 88 | 9 | 1 |
| Does the school set up parent/teacher conferences? | Special Emphasis | 47 | 31 | 20 |
| | Comparison | 40 | 37 | 20 |

*Non-response or rounding estimates are responsible for row totals below or above 100%.

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## MICHIGAN

### Summary

The covariance analyses of reading comprehension test scores revealed no consistent patterns of differences between the Special Emphasis and comparison groups. Significant differences were observed in two instances in the "whole grade" analysis and in two instances in the "below mean" analysis. In each of these cases, the findings favored the comparison school.

Teacher perception of positive attitudinal change among students and peers was high in both schools in 1978 and slightly lower in 1979. Teacher perception of students' reading behaviors was similar for both schools in 1978, but slightly higher in the the comparison school in 1979. There were no observed carry over effects from Special Emphasis in Michigan.

Project outcomes for the Michigan site are further described in the following subsections.

### Covariance Analysis of "Whole Grade" Cohort Groups

Table 5.10, ANCOVA Impact Summary, provides a summary of data contained in the ANCOVA tables shown in Appendixes E and F.

As can be seen in Table 5.10, there were no statistically significant differences between the Special Emphasis and comparison schools for 1977-78.

For project year 1978-79, statistically significant differences in the adjusted posttest scaled scores were identified in grades 3 and 5. In each case, the adjusted posttest scaled scores for the comparison group were higher than those for the Special Emphasis group. At the grade 3 level, the average observed change in grade equivalent was 1.0 for the Special Emphasis group and 1 3 for the comparison group. At the grade 5 level, the comparison group achieved an average observed

## TABLE 5.10

## ANCOVA IMPACT SUMMARY

Site: MICHIGAN

WHOLE GRADE

| PROJECT YEAR 1977-1978 | | | | |
|---|---|---|---|---|
| Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. |
| 2 | S.E.<br>C. | N.S. | - | +0.5<br>+0.5 |
| 3 | S.E.<br>C. | N.S. | - | +1.0<br>+0.9 |
| 4 | S.E.<br>C. | N.S. | - | +0.6<br>+0.7 |
| 5 | S.E.<br>C. | N.S. | - | 0<br>-0.1 |
| 6 | S.E.<br>C. | N.S. | - | +0.9<br>+1.0 |

| PROJECT YEAR 1978-1979 | | | | |
|---|---|---|---|---|
| Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. |
| 2 | S.E.<br>C. | N.S. | - | +0.8<br>+0.7 |
| 3 | S.E.<br>C. | .02 | C. | +1.0<br>+1.3 |
| 4 | S.E.<br>C. | N.S. | - | +0.7<br>+0.5 |
| 5 | S.E.<br>C. | .01 | C. | 0<br>+0.6 |
| 6 | S.E.<br>C. | N/A | | |

| PROJECT YEARS 1977-1979 | | | | |
|---|---|---|---|---|
| Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. |
| 2 | S.E.<br>C. | N/A | | |
| 3 | S.E.<br>C. | N.S. | - | +1.6<br>+1.8 |
| 4 | S.E.<br>C. | N.S. | - | +1.7<br>+1.5 |
| 5 | S.E.<br>C. | N.S. | - | +0.6<br>+0.9 |
| 6 | S.E.<br>C. | | | |

BELOW GRADE MEAN

| PROJECT YEAR 1977-1978 | | | | |
|---|---|---|---|---|
| Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. |
| 2 | S.E.<br>C. | N.S. | - | +0.6<br>+0.6 |
| 3 | S.E.<br>C. | .02 | C. | +0.8<br>+1.0 |
| 4 | S.E.<br>C. | N.S. | - | +0.4<br>+0.5 |
| 5 | S.E.<br>C. | N.S. | - | 0<br>+0.1 |
| 6 | S.E.<br>C. | N.S. | - | +0.7<br>+0.6 |

| PROJECT YEAR 1978-1979 | | | | |
|---|---|---|---|---|
| Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. |
| 2 | S.E.<br>C. | N.S. | - | +0.9<br>+0.9 |
| 3 | S.E.<br>C. | N.S. | - | +0.9<br>+1.0 |
| 4 | S.E.<br>C. | N.S. | - | +0.3<br>+0.4 |
| 5 | S.E.<br>C. | .04 | C. | -0.1<br>+0.3 |
| 6 | S.E.<br>C. | N/A | | |

change in grade equivalent of .6 (the expectation level for "low achieving" students) and the Special Emphasis students achieved an average observed change in grade equivalent of 0. Ceiling effects present in the pre- and posttest scores for both grade 3 groups preclude any meaningful interpretation of gain. Similarly, ceiling effects in the grade 5 pretest scores result in an overestimation of observed change in grade equivalent at that level.

For the 2-year period, 1977-79, there were no statistically significant differences between the Special Emphasis and comparison groups.

## Covariance Analysis of "Below Mean" Cohort Groups

Focusing on those students scoring below the mean on the prestest for project year 1977-78, there was a statistically significant difference favoring the comparison school for grade 3. For the "below mean" comparison group, there was an average observed change in grade equivalent of 1.0; while for the Special Emphasis "below mean" group the average observed change was .8 years. The ANCOVA did not produce a statistically significant difference for the "whole grade" grade 3 groups.

In project years 1978-79, there was a statistically significant difference favoring the comparison "below mean" group for grade 5. This finding parallels the ANCOVA outcomes for the "whole grade" group for the same project year. In this instance, the comparison school students had an average observed change in grade equivalent of .3 years vs. .1 for the Special Emphasis "below mean" group.

## Trend Analysis of Students Reading 1 or More Years Below Grade Level

Data on numbers of students reading 1 or more years below grade level (which is detailed in Appendix D) are summarized in Table 5.11. These data provide a trend analysis of the percentage of students in grade cohorts reading 1 or more years below grade level in 1977, 1978, and 1979.

## TABLE 5.11

## TREND ANALYSIS OF STUDENTS READING 1 OR MORE YEARS BELOW GRADE LEVEL

Site: MICHIGAN

| | Treatment School | | | Comparison School | | |
|---|---|---|---|---|---|---|
| Grade | Spring 1977 | Spring 1978 | Spring 1979 | Spring 1977 | Spring 1978 | Spring 1979 |
| | % | % | % | % | % | % |
| 2 | 19 | 11 | 4 | 28 | 25 | 8 |
| 3 | 26 | 25 | 18 | 24 | 20 | 20 |
| 4 | 55 | 58 | 57 | 55 | 44 | 60 |
| 5 | 71 | 70 | 76 | 84 | 77 | 63 |
| 6 | 65 | 71 | N/A | 70 | 76 | N/A |
| School Total | 38 | 37 | 31 | 44 | 40 | 29 |

Overall, the rate of students falling below grade is similar for both schools. The drop in total percentage of students below grade level appears to be related to the entry of students who were not previously tested and the exit of students no longer in the program. Second grade students in each school did progressively better each year, with the 1979 second graders in the comparison school having far fewer students below level than the second graders the year before.

Table 5.12, Number of Students Reading 1 or More Years Below Grade Level, shows that overall for students tested both at the beginning and end of each project year a greater percentage were reading 1 or more years below grade level at the end of the project year than at the beginning of the project year. In 1977-78, the percentage of students reading 1 or more years below grade rose by 11% from 33% to 44% in the Special Emphasis school and by 12% from 35% to 47%, in the comparison school. In 1978-79, both schools experienced a 12% increase in the number of students reading 1 or more years below grade level. The rate at which students are falling 1 or more years below grade level is similar for both the treatment and comparison schools.

## TABLE 5.12

## NUMBER OF STUDENTS READING 1 OR MORE YEARS BELOW GRADE LEVEL

Site: MICHIGAN

| | Treatment School | | Comparison School | |
|---|---|---|---|---|
| | Project Year | | Project Year | |
| | 1977-78 | 1978-79 | 1977-78 | 1978-79 |
| 1. Total students tested at both points* | 391 | 338 | 308 | 267 |
| Beginning of Project Year | | | | |
| 2. No. students tested > 1 year below grade[†] | 131 | 75 | 109 | 57 |
| 3. % of total students (line 2/line 1) | 33% | 22% | 35% | 21% |
| End of Project Year | | | | |
| 4. No. students tested > 1 year below grade[§] | 172 | 115 | 145 | 89 |
| 5. % of total students (line 4/line 1) | 44% | 34% | 47% | 33% |

[*] Spring 1977 and spring 1978 for 1977-78
Spring 1978 and spring 1979 for 1978-79

[†] Spring 1977 for 1977-78 and spring 1978 for 1978-79

[§] Spring 1978 for 1977-78 and spring 1979 for 1978-79

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### Attitudinal and Behavioral Findings

Survey data regarding reading attitudes and behaviors was analyzed for 1978 and 1979. A summary of the major findings from the various respondent groups is presented below.

#### Teachers

- In 1978, student reading attitudes and behaviors improved at the Special Emphasis school. Comparison school teachers also reported positive changes in students. In 1979, improvement in student attitudes and behaviors were again reported although the percentage of teachers reporting such change dropped. (Tables 5.13 and 5.14)

- In 1978, teachers' attitudes showed improvement at the Special Emphasis and comparison school. A drop in teacher perception of change occurred in 1979. (Table 5.13)
- In 1978 and 1979, not all teachers at the Special Emphasis school were happy with Special Emphasis. The most frequently mentioned concerns were conflict between teachers and reading specialists and dissatisfaction with project objectives. (Table 5.15)
- In 1978 and 1979, comparison school teachers resented the testing and additional work Special Emphasis imposed upon them. (Table 5.15)

Students and Parents

- In 1978, data from Special Emphasis and comparison school third graders show divergent reading attitudes and behaviors. (Table 5.16)
- In 1979, data from Special Emphasis and comparison school third graders suggest they were more similar in reading attitudes and behaviors. (Table 5.16)
- In 1978 and 1979, Special Emphasis and comparison school fourth, fifth, and sixth graders have similar reading attitudes and behaviors. (Table 5.17)
- In 1978 and 1979, parent survey data show only slight differences in parent responses from the Special Emphasis and comparison schools. (Table 5.18)

### Residual Effects of Special Emphasis

The project school in Michigan appears to be devoid of residual effects from Special Emphasis. In retrospect, neither district administrators nor school staff were able to identify any specific carry over in policies, procedures, or practices as a result of Special Emphasis. This situation may well reflect the lack of planning, direction, and district commitment which was apparent to the study team during the course of this evaluation.

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## TABLE 5.13

## TEACHERS' ASSESSMENTS OF ATTITUDES*

Site: MICHIGAN

School: SPECIAL EMPHASIS

| Teachers' Assessment of: / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Students' attitudes toward reading | 1978 | 84 | 8 | 8 | - | - |
| | 1979 | 53 | 29 | - | 12 | 6 |
| Teachers' attitudes toward reading instruction | 1978 | 64 | 32 | 4 | - | - |
| | 1979 | 47 | 41 | 6 | - | 6 |
| Principals' attitudes toward reading program | 1978 | 24 | 16 | - | - | 60 |
| | 1979 | 24 | 24 | - | 41 | 12 |

School: COMPARISON

| Teachers' Assessment of: / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Students' attitudes toward reading | 1978 | 91 | 10 | - | - | - |
| | 1979 | 61 | 17 | - | 17 | 6 |
| Teachers' attitudes toward reading instruction | 1978 | 71 | 19 | - | - | 10 |
| | 1979 | 44 | 22 | - | 22 | 11 |
| Principals' attitudes toward reading program | 1978 | 19 | 29 | - | - | 52 |
| | 1979 | 17 | 22 | - | 50 | 11 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.14

## TEACHERS' ASSESSMENTS OF STUDENT READING BEHAVIORS*

Site: MICHIGAN

School: SPECIAL EMPHASIS

| Teachers' Assessment of Student Reading Behaviors \ Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Time spent reading in class | 1978 | 72 | 28 | - | - | - |
| | 1979 | 47 | 47 | - | - | 6 |
| Time spent reading outside of class | 1978 | 44 | 36 | - | 20 | - |
| | 1979 | 35 | 35 | - | 24 | 6 |
| Library and/or classroom book usage | 1978 | 68 | 20 | - | 12 | - |
| | 1979 | 53 | 35 | - | 6 | 6 |

School: COMPARISON

| Teachers' Assessment of Student Reading Behaviors \ Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Time spent reading in class | 1978 | 81 | 5 | - | - | 14 |
| | 1979 | 78 | 11 | - | 6 | 6 |
| Time spent reading outside of class | 1978 | 57 | 14 | - | - | 29 |
| | 1979 | 61 | 17 | - | 17 | 6 |
| Library and/or classroom book usage | 1978 | 90 | 5 | - | - | 5 |
| | 1979 | 61 | 11 | - | 11 | 16 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.15

## TEACHER CONCERNS RESULTING FROM SPECIAL EMPHASIS INVOLVEMENT*

Site: MICHIGAN

School: SPECIAL EMPHASIS

| | Year | Major Problem % | Minor Problem % | Not A Problem % |
|---|---|---|---|---|
| Teacher dissatisfaction with project objectives | 1978 | 8 | 36 | 52 |
| | 1979 | 12 | 18 | 65 |
| Conflict between project objectives and other district objectives | 1978 | - | 24 | 72 |
| | 1979 | 6 | 29 | 59 |
| Teacher feelings that reading is emphasized at expense of other programs | 1978 | 8 | 32 | 56 |
| | 1979 | 6 | 24 | 59 |
| Conflict between teachers and reading specialists | 1978 | 12 | 44 | 36 |
| | 1979 | | 35 | 59 |

School: COMPARISON

| | Year | Major Problem % | Minor Problem % | Not A Problem % |
|---|---|---|---|---|
| Teacher resentment of administering tests to students not benefiting from the project | 1978 | 43 | 10 | 29 |
| | 1979 | - | 22 | 56 |
| Teacher resentment of extra work without receiving new materials or other support | 1978 | 43 | 10 | 24 |
| | 1979 | 6 | 39 | 17 |
| Parental complaints about testing | 1978 | - | 10 | 52 |
| | 1979 | - | 11 | 72 |
| Teacher feelings that reading is emphasized at expense of other programs | 1978 | 10 | 5 | 57 |
| | 1979 | 6 | 11 | 67 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.16

## STUDENT ATTITUDES AND BEHAVIORS REGARDING READING - GRADE 3[*]

**Site:** MICHIGAN

**Year:** 1978

| | School | Yes % | Some-times % | No % |
|---|---|---|---|---|
| Reading is fun | Special Emphasis | 67 | 28 | 5 |
| | Comparison | 46 | 48 | 1 |
| I like to read during my free time | Special Emphasis | 70 | 28 | 2 |
| | Comparison | 70 | 23 | 2 |
| I like my reading class | Special Emphasis | 78 | 17 | 5 |
| | Comparison | 62 | 30 | 3 |
| I read only when I have to | Special Emphasis | 49 | 29 | 21 |
| | Comparison | 21 | 19 | 56 |

**Year:** 1979

| | School | Yes % | Some-times % | No % |
|---|---|---|---|---|
| Reading is fun | Special Emphasis | 75 | 16 | 3 |
| | Comparison | 79 | 20 | 1 |
| I like to read during my free time | Special Emphasis | 44 | 38 | 11 |
| | Comparison | 48 | 39 | 13 |
| I like my reading class | Special Emphasis | 59 | 25 | 10 |
| | Comparison | 79 | 16 | 5 |
| I read only when I have to | Special Emphasis | 46 | 23 | 25 |
| | Comparison | 19 | 27 | 54 |

[*] Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.17

## STUDENT ATTITUDES AND BEHAVIORS REGARDING READING - GRADES 4-6*

Site: MICHIGAN

Year: 1978

| Reading Attitudes | School | Yes % | Some-Times % | No % |
|---|---|---|---|---|
| Do you like to read? | Special Emphasis | 58 | 41 | 1 |
| | Comparison | 65 | 33 | 0 |
| Do you read better this year than last year? | Special Emphasis | 78 | 13 | 7 |
| | Comparison | 82 | 11 | 4 |
| **Reading Habits** | **School** | **0 %** | **1-5 %** | **6+ %** |
| How many hours do you spend reading outside of school per week? | Special Emphasis | 18 | 61 | 20 |
| | Comparison | 23 | 61 | 12 |
| How many books have you read during the past month? | Special Emphasis | 7 | 29 | 63 |
| | Comparison | 5 | 39 | 52 |

Year: 1979

| Reading Attitudes | School | Yes % | Some-Times % | No % |
|---|---|---|---|---|
| Do you like to read? | Special Emphasis | 53 | 44 | 2 |
| | Comparison | 51 | 43 | 2 |
| Do you read better this year than last year? | Special Emphasis | 89 | - | 10 |
| | Comparison | 91 | - | 4 |
| **Reading Habits** | **School** | **0 %** | **1-5 %** | **6+ %** |
| How many hours do you spend reading outside of school per week? | Special Emphasis | 19 | 66 | 15 |
| | Comparison | 22 | 62 | 11 |
| How many books have you read during the past month? | Special Emphasis | 5 | 27 | 67 |
| | Comparison | 9 | 38 | 46 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.18

## SUMMARY OF PARENT SURVEY*

Site: MICHIGAN

Year: 1978

|  | School | Yes % | No % | Cannot Say % |
|---|---|---|---|---|
| Does your child share books with you or your family? | Special Emphasis | 81 | 14 | 4 |
|  | Comparison | 82 | 14 | 3 |
| Does the school set up parent/teacher conferences? | Special Emphasis | 81 | 14 | 4 |
|  | Comparison | 77 | 14 | 7 |
| Have you worked as a volunteer in your child's school this year? | Special Emphasis | 12 | 76 | 1 |
|  | Comparison | 7 | 75 | 1 |

Year: 1979

|  | School | Yes % | No % | Cannot Say % |
|---|---|---|---|---|
| Does your child share books with you or your family? | Special Emphasis | 86 | 7 | 5 |
|  | Comparison | 88 | 6 | 3 |
| Does the school set up parent/teacher conferences? | Special Emphasis | 89 | 4 | 6 |
|  | Comparison | 82 | 9 | 7 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## OHIO

### Summary

The ANCOVA performed for the Ohio project showed virtually no significant differences during project year 1977-78. The one exception was in favor of the Special Emphasis school in the analysis of students scoring below the mean on the pretest. Over the course of the 1977-78 project year, however, a smaller percentage of students in the comparison school than the Special Emphasis school fell 1 or more years below grade level in reading. As previously discussed in Section 4, the Ohio project was not evaluated for the 1978-79 project year.

Comparison school teachers reported slightly more positive attitudinal and behavioral changes with respect to reading than did the treatment school teachers. Resentment regarding participation in the Special Emphasis evaluation was high among comparison school teachers. In spite of LEA problems which plagued the project throughout its implementation, the instructional model used in Special Emphasis is now being maintained for use in other district schools.

The following subsections present a review of project outcomes at the Ohio site.

### Covariance Analysis of "Whole Grade" Cohort Groups

The summary of the ANCOVA for each grade in the Special Emphasis and comparison schools in Ohio is contained in Table 5.19, ANCOVA Impact Summary. As shown by this table, there were no statistically significant differences in project year 1977-78 for the "whole grade" cohort groups.

### Covariance Analysis of "Below Mean" Cohort Groups

For the "below mean" ANCOVA, a significant difference was evident only at grade 6 in which the adjusted mean posttest scaled score for the Special Emphasis group exceeded the score for the comparison school group. The average observed change in grade equivalent was 1.6 years

## TABLE 5.19

## ANCOVA IMPACT SUMMARY

Site: OHIO

| WHOLE GRADE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROJECT YEAR 1977-1978 | | | | | PROJECT YEAR 1978-1979 | | | | | PROJECT YEARS 1977-1979 | | | | |
| Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. | Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. | Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. |
| 2 | S.E.<br>C. | N.S. | - | +0.6<br>+0.6 | 2 | S.E.<br>C. | N/A | | | 2 | S.E.<br>C. | N/A | | |
| 3 | S.E.<br>C. | N.S. | - | +1.2<br>+1.4 | 3 | S.E.<br>C. | N/A | | | 3 | S.E.<br>C. | N/A | | |
| 4 | S.E.<br>C. | N.S. | - | +0.4<br>+0.5 | 4 | S.E.<br>C. | N/A | | | 4 | S.E.<br>C. | N/A | | |
| 5 | S.E.<br>C. | N.S. | - | -0.2<br>-0.5 | 5 | S.E.<br>C. | N/A | | | 5 | S.E.<br>C. | N/A | | |
| 6 | S.E.<br>C. | N.S. | - | +1.6<br>+1.4 | 6 | S.E.<br>C. | N/A | | | 6 | S.E.<br>C. | N/A | | |

| BELOW GRADE MEAN | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| PROJECT YEAR 1977-1978 | | | | | PROJECT YEAR 1978-1979 | | | | |
| Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. | Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. |
| 2 | S.E.<br>C. | N.S. | - | +0.6<br>+0.5 | 2 | S.E.<br>C. | N/A | | |
| 3 | S.E.<br>C. | N.S. | - | +1.2<br>+1.0 | 3 | S.E.<br>C. | N/A | | |
| 4 | S.E.<br>C. | N.S. | - | +0.2<br>+0.3 | 4 | S.E.<br>C. | N/A | | |
| 5 | S.E.<br>C. | N.S. | - | -0.3<br>+0.2 | 5 | S.E.<br>C. | N/A | | |
| 6 | S.E.<br>C. | .04 | S.E. | +1.6<br>+0.6 | 6 | S.E.<br>C. | N/A | | |

for the Special Emphasis "below mean" group and 0.6 for comparison "below mean" group. The relatively small sample of "below mean" students (refer to Appendix F) at this grade should, however, be noted.

## Trend Analysis of Students Reading 1 or More Years Below Grade Level

Because the Ohio site did not participate in the study after 1977-78 a multi-year trend analysis is not possible. Table 5.20 illustrates the percentages of students at each grade who were reading 1 or more years below level in 1977-78.

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### TABLE 5.20
### TREND ANALYSIS OF STUDENTS READING 1 OR MORE YEARS BELOW GRADE LEVEL

Site: OHIO

|  | Treatment School |  |  | Comparison School |  |  |
|---|---|---|---|---|---|---|
| Grade | Spring 1977 | Spring 1978 | Spring 1979 | Spring 1977 | Spring 1978 | Spring 1979 |
|  | % | % | % | % | % | % |
| 2 | 18 | N/A | N/A | 14 | N/A | N/A |
| 3 | 29 | N/A | N/A | 17 | N/A | N/A |
| 4 | 34 | N/A | N/A | 58 | N/A | N/A |
| 5 | 43 | N/A | N/A | 70 | N/A | N/A |
| 6 | 40 | N/A | N/A | 47 | N/A | N/A |
| School Total | 27 | N/A | N/A | 32 | N/A | N/A |

---

During project year 1977-78, the percentage of students in the comparison school reading 1 or more years below grade level at the beginning and end of the project year did not increase at the same rate as in the Special Emphasis school. As Table 5.21 shows, only 5% more of the comparison school students read 1 or more years below level, from 28% to 33%, that year compared with 14%, from 23% to 37%, of the treatment school students. The bulk of this increase occurred at the grade 5 level (refer to Table D.7 in Appendix D).

## TABLE 5.21

## NUMBER OF STUDENTS READING 1 OR MORE YEARS BELOW GRADE LEVEL

Site: OHIO

| | Treatment School Project Year | | Comparison School Project Year | |
|---|---|---|---|---|
| | 1977-78 | 1978-79 | 1977-78 | 1978-79 |
| 1. Total students tested at both points* | 173 | N/A | 143 | N/A |
| Beginning of Project Year | | | | |
| 2. No. students tested > 1 year below grade† | 40 | N/A | 40 | N/A |
| 3. % of total students (line 2/line 1) | 23% | N/A | 28% | N/A |
| End of Project Year | | | | |
| 4. No. students tested > 1 year below grade§ | 65 | N/A | 48 | N/A |
| 5. % of total students (line 4/line 1) | 37% | N/A | 33% | N/A |

*Spring 1977 and spring 1978 for 1977-78
Spring 1978 and spring 1979 for 1978-79

†Spring 1977 for 1977-78 and spring 1978 for 1978-79

§Spring 1978 for 1977-78 and spring 1979 for 1978-79

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### Attitudinal and Behavioral Findings

Because the Special Emphasis evaluation was not continued during 1978-79 in Ohio, no observations regarding attitudinal and behavioral changes can be made. Based upon the data collected in 1978 several comments can be made.

- Comparison school teachers were more positive regarding reading attitudes and behaviors than Special Emphasis school teachers. (Tables 5.22 and 5.23)
- Comparison school teachers expressed resentment over their involvement in the Special Emphasis Project. (Table 5.24)

- Special Emphasis school teachers expressed concern that reading was being emphasized at the expense of other program areas. (Table 5.24)

## Residual Effects of Special Emphasis

In spite of its problems in implementing and sustaining Special Emphasis, the Ohio site managed to derive permanent benefits from the project. The language experience approach to reading instruction, which was the philosophical core of their Special Emphasis model, is being implemented at the new magnet schools designed to be a positive force in the district's desegregation efforts. It seems evident that an underlying factor in this carry over was the district's intention, from the outset of the project, to replicate the model piloted in Special Emphasis.

## TABLE 5.22

## TEACHERS' ASSESSMENTS OF ATTITUDES*

Site: OHIO

School: SPECIAL EMPHASIS

| Teachers' Assessment of: / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Students' attitudes toward reading | 1978 | 70 | 30 | - | - | - |
| | 1979 | - | - | - | - | - |
| Teachers' attitudes toward reading instruction | 1978 | 60 | 30 | - | 10 | - |
| | 1979 | - | - | - | - | - |
| Principals' attitudes toward reading program | 1978 | 30 | 20 | - | 50 | - |
| | 1979 | - | - | - | - | - |

School: COMPARISON

| Teachers' Assessment of: / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Students' attitudes toward reading | 1978 | 100 | - | - | - | - |
| | 1979 | - | - | - | - | - |
| Teachers' attitudes toward reading instruction | 1978 | 86 | - | - | - | 14 |
| | 1979 | - | - | - | - | - |
| Principals' attitudes toward reading program | 1978 | 57 | 14 | - | - | 29 |
| | 1979 | - | - | - | - | - |

*Non-response or rounding estimates are responsible for row totals below or above 100%.

# TABLE 5.23

# TEACHERS' ASSESSMENTS OF STUDENT READING BEHAVIORS*

Site: OHIO

School: SPECIAL EMPHASIS

| Teachers' Assessment of Student Reading Behaviors / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Time spent reading in class | 1978 | 60 | 30 | - | - | 10 |
| | 1979 | - | - | - | - | - |
| Time spent reading outside of class | 1978 | 20 | 20 | - | - | 60 |
| | 1979 | - | - | - | - | - |
| Library and/or classroom book usage | 1978 | 60 | 30 | - | - | 10 |
| | 1979 | - | - | - | - | - |

School: COMPARISON

| Teachers' Assessment of Student Reading Behaviors / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Time spent reading in class | 1978 | 86 | - | - | - | 14 |
| | 1979 | - | - | - | - | - |
| Time spent reading outside of class | 1978 | 72 | 14 | - | - | 14 |
| | 1979 | - | - | - | - | - |
| Library and/or classroom book usage | 1978 | 72 | 14 | - | - | 14 |
| | 1979 | - | - | - | - | - |

[*] Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.24

## TEACHER CONCERNS RESULTING FROM SPECIAL EMPHASIS INVOLVEMENT*

Site: OHIO

School. SPECIAL EMPHASIS

| | Year | Major Problem % | Minor Problem % | Not A Problem % |
|---|---|---|---|---|
| Teacher dissatisfaction with project objectives | 1978 | - | 10 | 70 |
| | 1979 | - | - | - |
| Conflict between project objectives and other district objectives | 1978 | - | - | 80 |
| | 1979 | - | - | - |
| Teacher feelings that reading is emphasized at expense of other programs | 1978 | 10 | 40 | 40 |
| | 1979 | - | - | - |
| Conflict between teachers and reading specialists | 1978 | - | - | 90 |
| | 1979 | - | - | - |

School: COMPARISON

| | Year | Major Problem % | Minor Problem % | Not A Problem % |
|---|---|---|---|---|
| Teacher resentment of administering tests to students not benefiting from the project | 1978 | 57 | 14 | 29 |
| | 1979 | - | - | - |
| Teacher resentment of extra work without receiving new materials or other support | 1978 | 86 | 14 | - |
| | 1979 | - | - | - |
| Parental complaints about testing | 1978 | - | 29 | 71 |
| | 1979 | - | - | - |
| Teacher feelings that reading is emphasized at expense of other programs | 1978 | - | - | 10 |
| | 1979 | - | - | - |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TENNESSEE

### Summary

The ANCOVA indicated no significant differences for the Tennessee site in project years 1977-78 and 1978-79 or for the period of 1977-79. The comparison school did experience a net reduction of students reading 1 or more years below level in 1977-78--one of only two such instances observed in the Special Emphasis Project study sites. Apparent improvement in both schools in the percentages of students reading 1 or more years below level over the course of the study seems to be heavily influenced by the exit of low achieving cohort groups and individuals from the observed sample (e.g., sixth graders). This phenomenon merits closer scrutiny.

Approximately half of the teachers in the treatment school thought that reading may have been emphasized at the expense of other subjects. These reservations notwithstanding, the Special Emphasis school teachers identified a wide variety of reading instruction practices which they acquired during the Special Emphasis Project and which they will continue to use in their teaching. Thus, while the impact of Special Emphasis, based on tests of statistical significance on the SDRT results, were inconclusive, the residual institutional benefits in the Tennessee site are quite clear.

The following subsections describe in detail the project outcomes for Tennessee.

### Covariance Analysis of "Whole Grade" Cohort Groups

A summary of the ANCOVA for each grade in the Special Emphasis comparison schools is contained in Table 5.25, ANCOVA Impact Summary. There were no significant differences in the adjusted posttest scaled scores for project years 1977-78 and 1978-79 nor for the total period 1977-79 for the "whole grade" cohort groups.

## TABLE 5.25

## ANCOVA IMPACT SUMMARY

Site: TENNESSEE

| WHOLE GRADE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROJECT YEAR 1977-1978 | | | | | PROJECT YEAR 1978-1979 | | | | | PROJECT YEARS 1977-1979 | | | | |
| Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. | Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. | Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. |
| 2 | S.E.<br>C. | N.S. | - | +0.7<br>+0.7 | 2 | S.E.<br>C. | N.S. | - | +0.8<br>+0.8 | 2 | S.E.<br>C. | N/A | | |
| 3 | S.E.<br>C. | N.S. | - | +1.3<br>+1.4 | 3 | S.E.<br>C. | N.S. | - | +1.0<br>+1.3 | 3 | S.E.<br>C. | N.S. | - | +1.7<br>+2.0 |
| 4 | S.E.<br>C. | N.S. | - | +0.7<br>+1.4 | 4 | S.E.<br>C. | N.S. | - | +0.9<br>+1.1 | 4 | S.E.<br>C. | N.S. | - | +2.2<br>+2.5 |
| 5 | S.E.<br>C. | N.S. | - | +0.5<br>+0.8 | 5 | S.E.<br>C. | N.S. | - | +0.1<br>+0.6 | 5 | S.E.<br>C. | N.S. | - | +0.7<br>+2.0 |
| 6 | S.E.<br>C. | N.S. | - | +0.9<br>+1.7 | 6 | S.E.<br>C. | N.S. | - | +1.1<br>+1.8 | 6 | S.E.<br>C. | N.S. | - | +1.7<br>+2.4 |

| BELOW GRADE MEAN | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| PROJECT YEAR 1977-1978 | | | | | PROJECT YEAR 1978-1979 | | | | |
| Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. | Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. |
| 2 | S.E.<br>C. | N.S. | - | +0.8<br>+0.9 | 2 | S.E.<br>C. | N.S. | - | +0.9<br>+0.9 |
| 3 | S.E.<br>C. | N.S. | - | +0.9<br>+1.3 | 3 | S.E.<br>C. | N.S. | - | +0.9<br>+1.2 |
| 4 | S.E.<br>C. | N.S. | - | +0.6<br>+1.3 | 4 | S.E.<br>C. | N.S. | - | +0.7<br>+0.9 |
| 5 | S.E.<br>C. | N.S. | - | +0.4<br>+0.7 | 5 | S.E.<br>C. | N.S. | - | +0.1<br>+0.5 |
| 6 | S.E.<br>C. | N.S. | - | +0.6<br>+1.0 | 6 | S.E.<br>C. | N.S. | - | +1.0<br>+1.1 |

## Covariance Analysis of "Below Mean" Cohort Groups

For project years 1977-78 and 1978-79 there were no significant differences in the adjusted posttest scaled scores in the analysis of the "below mean" cohort group.

## Trend Analysis of Students Reading 1 or More Years Below Grade Level

Table 5.26, Trend Analysis of Students Reading 1 or More Years Below Grade Level, combines data from Tables D.8 to D.10 in Appendix D to provide a trend analysis of the percentage of students reading 1 or more years below grade level in 1977, 1978, and 1979.

TABLE 5.26

TRENDS ANALYSIS OF STUDENTS READING 1 OR MORE YEARS BELOW GRADE LEVEL

Site: TENNESSEE

| | Treatment School | | | Comparison School | | |
|---|---|---|---|---|---|---|
| Grade | Spring 1977 | Spring 1978 | Spring 1979 | Spring 1977 | Spring 1978 | Spring 1979 |
| | % | % | % | % | % | % |
| 2 | 31 | 14 | 0 | 3 | 7 | 0 |
| 3 | 43 | 20 | 16 | 42 | 4 | 8 |
| 4 | 51 | 53 | 20 | 46 | 17 | 21 |
| 5 | 64 | 64 | 60 | 73 | 59 | 45 |
| 6 | 62 | 66 | 45 | 55 | 58 | 50 |
| School Total | 45 | 37 | 20 | 34 | 20 | 20 |

Both the treatment and comparison schools had a drop from 1977 to 1979 in the percentage of students reading 1 or more years below grade level; for the Special Emphasis school, from 45% to 20%, and, for the comparison school, from 34% to 20%. By referring to Table D.8 in Appendix D, it can be shown that the drop in the percentage of students reading 1 or more years below grade level from 31% to 20%, between grade 2 students in Spring 1977 and grade 3 students in spring 1978 is due to the exit of low achieving students and not the improvement during the 1977-78 project year of students who were reading 1 or more years below grade level at the beginning of the project year. This same conclusion applies to the other instances where a drop occurred in the percentage of students reading 1 or more years below grade level.

It is evident from Table 5.26 that second grade students in the treatment school are testing better each successive year; few comparison school second graders scored 1 or more years below grade level at any testing point.

Table 5.27, Numbers of Students Reading 1 or More Years Below Grade Level, shows that, for students tested both at the beginning and end of each project year, the treatment school had an increase in the percentage of students reading 1 or more years below grade level of 8% from 39% to 47% in 1977-78, and 2%, from 25% to 27% in 1978-79. The comparison school had a net decrease of 2%, from 26% to 24% in 1977-78 and an increase of 8%, from 15% to 23% in 1978-79.

### Attitudinal and Behavioral Findings

Data were collected in 1978 and 1979 from teachers, students, and parents regarding reading attitudes and behaviors. A summary of findings by the various respondent groups are presented below.

#### Teachers

- At the Special Emphasis school, improvement in student reading attitudes and behaviors and in teachers and the principal's attitudes were reported in both 1978 and 1979. (Tables 5.28 and 5.29)
- At the comparison school, student attitudes and behaviors and teachers attitudes improved in 1978 and 1979. (Tables 5.28 and 5.29)
- At the comparison school, following the assignment of a new principal in 1978, teachers reported an improvement in the principal's attitude toward reading. (Table 5.28)

## TABLE 5.27

## NUMBERS OF STUDENTS READING 1 OR MORE YEARS BELOW GRADE LEVEL

Site: TENNESSEE

| | Treatment School | | Comparison School | |
|---|---|---|---|---|
| | Project Year | | Project Year | |
| | 1977-78 | 1978-79 | 1977-78 | 1978-79 |
| 1. Total students tested at both points* | 199 | 160 | 100 | 105 |
| **Beginning of Project Year** | | | | |
| 2. No. students tested > 1 year below grade† | 78 | 40 | 26 | 16 |
| 3. % of total students (line 2/line 1) | 39% | 25% | 26% | 15% |
| **End of Project Year** | | | | |
| 4. No. students tested > 1 year below grade§ | 94 | 43 | 24 | 24 |
| 5. % of total students (line 4/line 1) | 47% | 27% | 24% | 23% |

* Spring 1977 and spring 1978 for 1977-78
Spring 1978 and spring 1979 for 1978-79

† Spring 1977 for 1977-78 and spring 1978 for 1978-79

§ Spring 1978 for 1977-78 and spring 1979 for 1978-79

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- At the Special Emphasis school teachers felt that reading was being emphasized at the expense of other program areas in 1978 and 1979. (Table 5.30)
- At the comparison school in 1978 teachers expressed resentment over the extra work project participation imposed, in 1979 no teacher expressed objection. (Table 5.30)

Students and Parents

- At the Special Emphasis and comparison schools, third graders reveal disparate reading attitudes and behaviors in the majority of areas probed in 1978 and 1979. (Table 5.31)

## TABLE 5.28

## TEACHERS' ASSESSMENTS OF ATTITUDES*

Site: TENNESSEE

School: SPECIAL EMPHASIS

| Teachers' Assessment of: / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Students' attitudes toward reading | 1978 | 100 | - | - | - | - |
| | 1979 | 82 | 9 | 9 | - | - |
| Teachers' attitudes toward reading instruction | 1978 | 86 | 14 | - | - | - |
| | 1979 | 91 | - | - | 9 | - |
| Principals' attitudes toward reading program | 1978 | 86 | - | - | - | 14 |
| | 1979 | 82 | - | - | 18 | - |

School: COMPARISON

| Teachers' Assessment of: / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Students' attitudes toward reading | 1978 | 100 | - | - | - | - |
| | 1979 | 100 | - | - | - | - |
| Teachers' attitudes toward reading instruction | 1978 | 73 | 27 | - | - | - |
| | 1979 | 100 | - | - | - | - |
| Principals' attitudes toward reading program | 1978 | 27 | 45 | - | - | 27 |
| | 1979 | 67 | 22 | - | 11 | - |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.29

## TEACHERS' ASSESSMENTS OF STUDENT READING BEHAVIORS*

Site: TENNESSEE

School: SPECIAL EMPHASIS

| Teachers' Assessment of Student Reading Behaviors / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Time spent reading in class | 1978 | 93 | 7 | - | - | - |
| | 1979 | 82 | 9 | - | 9 | - |
| Time spent reading outside of class | 1978 | 57 | 36 | - | - | 7 |
| | 1979 | 64 | - | - | 36 | - |
| Library and/or classroom book usage | 1978 | 79 | 21 | - | - | - |
| | 1979 | 73 | 9 | - | 18 | - |

School: COMPARISON

| Teachers' Assessment of Student Reading Behaviors / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Time spent reading in class | 1978 | 73 | 27 | - | - | - |
| | 1979 | 100 | - | - | - | - |
| Time spent reading outside of class | 1978 | 45 | 27 | - | 27 | - |
| | 1979 | 44 | - | - | 56 | - |
| Library and/or classroom book usage | 1978 | 91 | 9 | - | - | - |
| | 1979 | 100 | - | - | - | - |

*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.30

## TEACHER CONCERNS RESULTING FROM SPECIAL EMPHASIS INVOLVEMENT*

Site: TENNESSEE

School: SPECIAL EMPHASIS

| | Year | Major Problem % | Minor Problem % | Not A Problem % |
|---|---|---|---|---|
| Teacher dissatisfaction with project objectives | 1978 | - | - | 93 |
| | 1979 | - | 18 | 82 |
| Conflict between project objectives and other district objectives | 1978 | - | 14 | 79 |
| | 1979 | - | 27 | 73 |
| Teacher feelings that reading is emphasized at expense of other programs | 1978 | - | 50 | 43 |
| | 1979 | 9 | 27 | 64 |
| Conflict between teachers and reading specialists | 1978 | - | 14 | 79 |
| | 1979 | - | 18 | 82 |

School: COMPARISON

| | Year | Major Problem % | Minor Problem % | Not A Problem % |
|---|---|---|---|---|
| Teacher resentment of administering tests to students not benefiting from the project | 1978 | 9 | 9 | 73 |
| | 1979 | - | - | 100 |
| Teacher resentment of extra work without receiving new materials or other support | 1978 | 9 | 36 | 45 |
| | 1979 | - | - | 100 |
| Parental complaints about testing | 1978 | - | - | 91 |
| | 1979 | - | - | 100 |
| Teacher feelings that reading is emphasized at expense of other programs | 1978 | - | 27 | 64 |
| | 1979 | - | 11 | 89 |

*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.31

## STUDENT ATTITUDES AND BEHAVIORS REGARDING READING - GRADE 3*

**Site:** TENNESSEE

**Year:** 1978

| | School | Yes % | Some-times % | No % |
|---|---|---|---|---|
| Reading is fun | Special Emphasis | 40 | 52 | 7 |
| | Comparison | 52 | 31 | 9 |
| I like to read during my free time | Special Emphasis | 71 | 15 | 10 |
| | Comparison | 57 | 31 | 5 |
| I like my reading class | Special Emphasis | 60 | 22 | 15 |
| | Comparison | 64 | 19 | 9 |
| I read only when I have to | Special Emphasis | 50 | 15 | 33 |
| | Comparison | 38 | 19 | 33 |

**Year:** 1979

| | School | Yes % | Some-times % | No % |
|---|---|---|---|---|
| Reading is fun | Special Emphasis | 80 | 16 | 2 |
| | Comparison | 56 | 34 | 3 |
| I like to read during my free time | Special Emphasis | 44 | 42 | 13 |
| | Comparison | 53 | 34 | 6 |
| I like my reading class | Special Emphasis | 64 | 31 | 4 |
| | Comparison | 66 | 12 | 16 |
| I read only when I have to | Special Emphasis | 34 | 24 | 38 |
| | Comparison | 41 | 22 | 31 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

- At the Special Emphasis and comparison schools, students in the fourth, fifth, and sixth grades revealed nearly identical reading attitudes and behaviors in 1978 and 1979. (Table 5.32)
- The Special Emphasis and comparison schools parent data for 1978 and 1979 show little difference between the two groups. (Table 5.33)

Residual Effects of Special Emphasis

No site has experienced the degree of residual experience on the district, project school, staff, and families as has the Tennessee site. Not only have teachers and administrators seen scores improving on district-administered reading achievement tests, but everyone involved in the project felt that their approach to Special Emphasis "worked," i.e., the strategies devised for Special Emphasis were a better way of teaching than those they had employed in the past. According to the Assistant Superintendent for Instruction, the district will be looking for ways to apply project features--either with district funds or with outside funding. Even without further initiatives, he felt that there are definite residual effects: teachers have been trained in reading instruction, and they will apply their skills for years to come; and students and parents have been motivated to develop keen interest in reading and will influence other siblings.

In the view of the reading supervisor, Special Emphasis was implemented in a situation where Title I and ESAA hadn't made any impact in achievement levels--in fact, the situation was getting worse. By putting the reading specialists into the classroom with teachers, both children and teachers learned new skills. In areas such as technical decisions on student grouping and choosing appropriate materials to suit individual student needs and in routine matters such as space arrangement in the classroom, the teachers assimilated new approaches from the collegial interchange with the reading specialists. As a result, LEA officials feel that the classroom teachers are now in

## TABLE 5.32

## STUDENT ATTITUDES AND BEHAVIORS REGARDING READING - GRADES 4-6*

**Site:** TENNESSEE

**Year:** 1978

| Reading Attitudes | School | Yes % | Some-Times % | No % |
|---|---|---|---|---|
| Do you like to read? | Special Emphasis | 57 | 42 | 1 |
| | Comparison | 55 | 41 | 1 |
| Do you read better this year than last year? | Special Emphasis | 78 | 17 | 4 |
| | Comparison | 68 | 17 | 11 |
| **Reading Habits** | **School** | **0 %** | **1-5 %** | **6+ %** |
| How many hours do you spend reading outside of school per week? | Special Emphasis | 17 | 62 | 21 |
| | Comparison | 20 | 63 | 12 |
| How many books have you read during the past month? | Special Emphasis | 2 | 29 | 67 |
| | Comparison | 3 | 41 | 52 |

**Year:** 1979

| Reading Attitudes | School | Yes % | Some-Times % | No % |
|---|---|---|---|---|
| Do you like to read? | Special Emphasis | 46 | 50 | 2 |
| | Comparison | 55 | 42 | 3 |
| Do you read better this year than last year? | Special Emphasis | 89 | - | 9 |
| | Comparison | 96 | - | 4 |
| **Reading Habits** | **School** | **0 %** | **1-5 %** | **6+ %** |
| How many hours do you spend reading outside of school per week? | Special Emphasis | 24 | 63 | 11 |
| | Comparison | 20 | 72 | 8 |
| How many books have you read during the past month? | Special Emphasis | 5 | 44 | 49 |
| | Comparison | 6 | 29 | 64 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.33

## SUMMARY OF PARENT SURVEY*

**Site:** TENNESSEE

**Year:** 1978

| | School | Yes % | No % | Cannot Say % |
|---|---|---|---|---|
| Does your child share books with you or your family? | Special Emphasis | 80 | 16 | 4 |
| | Comparison | 75 | 18 | 4 |
| Does the school set up parent/teacher conferences? | Special Emphasis | 46 | 37 | 14 |
| | Comparison | 37 | 50 | 7 |
| Have you worked as a volunteer in your child's school this year? | Special Emphasis | 13 | 74 | 1 |
| | Comparison | 6 | 76 | 2 |

**Year:** 1979

| | School | Yes % | No % | Cannot Say % |
|---|---|---|---|---|
| Does your child share books with you or your family? | Special Emphasis | 81 | 11 | 6 |
| | Comparison | 86 | 10 | 1 |
| Does the school set up parent/teacher conferences? | Special Emphasis | 58 | 25 | 15 |
| | Comparison | 50 | 33 | 14 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

a better position to make decisions on what the students need. The experiment of putting the reading specialists into the classrooms with teachers, she feels, has had the greatest impact on students and teachers. Thus, she sees that the district can go a lot further than it has in the past in its utilization of specialists.

Originally, the school district was negative about attempting change "from the top down." Through the Special Emphasis experience they have learned that classroom teachers are looking for support. They now recognize that by providing resources and models, change can be initiated. Without this aspect of Special Emphasis, she feels the school would not be able to sustain the impetus once the Title VII funding ended.

From the experimental principal's perspective, both the students and the teachers have gained. Through staff development, the teachers have learned to use assessment in program planning and implementation. Parent involvement was not anticipated to the extent that it occurred. (Among the spin-off effects: 16 parents participated in a General Education Development (GED) class taught by a reading specialist; thus far, 7 parents have been awarded their GED.) After Special Emphasis funding expired, the principal designated the two reading specialists in his school as resource persons and reading materials coordinators, and the teachers continued to use these resources. Teachers report a better understanding and greater use of student grouping, diagnostic assessment, matching materials with students, and handling several groups within the classroom. While only 45% of the teachers predicted carry-over effects, 91% were able to cite specific, tangible benefits from Special Emphasis.

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# TEXAS

## Summary

The ANCOVA for the "whole grade" and "below mean" cohort groups in Texas showed scattered instances of significant differences between the Special Emphasis and comparison groups. In each of these instances, the adjusted posttest scaled scores for the Special Emphasis group exceeded that of the comparison group. These were statistically significant differences in adjusted posttest scores for both project years for the grade 2 "below mean" groups. The treatment and comparison schools experienced no overall change in the percentage of students reading 1 or more years below grade level over the 1977-79 period.

No obvious differences appeared with respect to perceptions of reading attitudes between the Special Emphasis and comparison schools. The school district's favorable experience with Special Emphasis has influenced policies and procedures relating to reading programs within the district, and several other residual effects from the project were noted as well.

The following subsections describe in detail the project outcomes for Texas.

## Covariance Analysis of "Whole Grade" Cohort Groups

The summary of the ANCOVA for each grade in the Special Emphasis and comparison schools is contained in Table 5.34, ANCOVA Impact Summary. In project year 1977-78, a statistically significant difference in the adjusted posttest scaled scores was identified for grade 2. In this instance, the score for the Special Emphasis group exceeded that of the comparison group. The average observed change in grade equivalent for the Special Emphasis group was 0.7 vs. 0.5 for the comparison group. The presence of ceiling effects in the posttest scores of each group result in an underestimation of the true change in grade equivalent.

## TABLE 5.34

## ANCOVA IMPACT SUMMARY

Site: TEXAS

WHOLE GRADE

PROJECT YEAR 1977-1978

| Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. |
|---|---|---|---|---|
| 2 | S.E.<br>C. | <.01 | S.E. | +0.7<br>+0.5 |
| 3 | S.E.<br>C. | N.S. | - | +1.1<br>+1.4 |
| 4 | S.E.<br>C. | N.S. | - | +0.8<br>+0.9 |
| 5 | S.E.<br>C. | N.S. | - | +0.6<br>+0.9 |
| 6 | S.E.<br>C. | N/A | | |

PROJECT YEAR 1978-1979

| Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. |
|---|---|---|---|---|
| 2 | S.E.<br>C. | <.01 | S.E. | +0.6<br>+0.4 |
| 3 | S.E.<br>C. | N.S. | - | +1.4<br>+1.4 |
| 4 | S.E.<br>C. | N.S. | - | +1.0<br>+0.8 |
| 5 | S.E.<br>C. | <.01 | S.E. | +1.7<br>+0.6 |
| 6 | S.E.<br>C. | N/A | | |

PROJECT YEARS 1977-1979

| Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. |
|---|---|---|---|---|
| 2 | S.E.<br>C. | N/A | | |
| 3 | S.E.<br>C. | N.S. | - | +2.0<br>+1.9 |
| 4 | S.E.<br>C. | N.S. | - | +2.1<br>+2.2 |
| 5 | S.E.<br>C. | .02 | S.E. | +2.5<br>+1.4 |
| 6 | S.E.<br>C. | N/A | | |

BELOW GRADE MEAN

PROJECT YEAR 1977-1978

| Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. |
|---|---|---|---|---|
| 2 | S.E.<br>C. | .04 | S.E. | +0.7<br>+0.5 |
| 3 | S.E.<br>C. | N.S. | - | +1.0<br>+1.2 |
| 4 | S.E.<br>C. | N.S. | - | +0.7<br>+0.9 |
| 5 | S.E.<br>C. | N.S. | - | +0.8<br>+0.8 |
| 6 | S.E.<br>C. | N/A | | |

PROJECT YEAR 1978-1979

| Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. |
|---|---|---|---|---|
| 2 | S.E.<br>C. | <.01 | S.E. | +0.6<br>+0.4 |
| 3 | S.E.<br>C. | N.S. | - | +1.1<br>+1.2 |
| 4 | S.E.<br>C. | N.S. | - | +0.8<br>+0.7 |
| 5 | S.E.<br>C. | N.S. | - | +1.2<br>+0.3 |
| 6 | S.E.<br>C. | N/A | | |

For project year 1978-79, the ANCOVA revealed a statistically significant difference in the adjusted posttest scaled score favoring the Special Emphasis group for grade 5. The average observed change in grade equivalent was 1.7 years for the Special Emphasis group and 0.6 for the comparison group.

For the 1977-79 period, a statistically significant difference in adjusted posttest scaled scores was identified for the grade 5 "whole grade" group completing grade 5 in spring 1979. This parellels the results of the grades ANCOVA for 1978-79. The observed change in grade equivalent was 2.5 years for the Special Emphasis group and 1.4 years for the comparison group. It should be noted, however, that ceiling effects were present on the pretest, thus causing an overestimation of the true change.

Covariance Analysis of "Below Mean" Cohort Groups

For project year 1977-78, the ANCOVA indicated a significant difference in the adjusted posttest scores for grade 2 favoring the Special Emphasis "below mean" group. This finding replicates the results for the "whole grade" analysis for grade 2 in the same project year. The average observed change in grade equivalent was identical to that for the "whole grade" group--0.7 for Special Emphasis "below mean" group and 0.5 for the comparison "below mean" group.

In project year 1978-79, the ANCOVA identified a statistically significant difference for grade 2 in mean adjusted posttest scores favoring the Special Emphasis group. In this case, the average observed change in grade equivalent was 0.6 for the Special Emphasis "below mean" group and 0.4 for the comparison "below mean" group.

## Trend Analysis of Students Reading 1 or More Years Below Grade Level

Table 5.35, Trend Analysis of Students Reading 1 or More Years Below Grade Level, combines data from Tables D.11 to D.13 in Appendix D to provide a trend analysis of the percentage of students reading 1 or more years below grade level in 1977, 1978, and 1979.

### TABLE 5.35

### TREND ANALYSIS OF STUDENTS READING 1 OR MORE YEARS BELOW GRADE LEVEL

Site: TEXAS

| Grade | Treatment School Spring 1977 | Treatment School Spring 1978 | Treatment School Spring 1979 | Comparison School Spring 1977 | Comparison School Spring 1978 | Comparison School Spring 1979 |
|---|---|---|---|---|---|---|
| | % | % | % | % | % | % |
| 2 | 7 | 6 | 1 | 3 | 8 | 6 |
| 3 | 7 | 12 | 10 | 15 | 7 | 9 |
| 4 | 22 | 26 | 30 | 25 | 34 | 27 |
| 5 | 52 | 35 | 37 | 43 | 32 | 43 |
| 6 | N/A | N/A | N/A | N/A | N/A | N/A |
| School Total | 18 | 18 | 15 | 17 | 20 | 16 |

Table 5.35 shows that there was almost no change in the percentage of students reading 1 or more years below grade level for either school during the course of the study. There are no instances where there are decrease in the percentage of students reading 1 or more years below grade level following normal grade progression.

Table 5.36, Number of Students Reading 1 or More Years Below Level, illustrates that the rate at which students fall a year or more below level is approximately the same for both Special Emphasis and the comparison school. In 1977-78, the percentage of students reading 1 or more years below grade level changed from 7% to 16%, a 9% increase for the treatment school from the beginning to end of the project year; for the comparison school, the change was from

10% to 20%, a 10% increase. In 1978-79, the increase in the percentage of students reading 1 or more years below grade level for the treatment school was 10%, from 8% to 18%; for the comparison school, the increase was 8%, from 17% to 25%.

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## TABLE 5.36

## NUMBER OF STUDENTS READING 1 OR MORE YEARS BELOW GRADE LEVEL

Site: TEXAS

| | Treatment School | | Comparison School | |
|---|---|---|---|---|
| | Project Year | | Project Year | |
| | 1977-78 | 1978-79 | 1977-78 | 1978-79 |
| 1. Total students tested at both points* | 278 | 190 | 334 | 248 |
| **Beginning of Project Year** | | | | |
| 2. No. students tested > 1 year below grade† | 19 | 16 | 34 | 42 |
| 3. % of total students (line 2/line 1) | 7% | 8% | 10% | 17% |
| **End of Project Year** | | | | |
| 4. No. students tested > 1 year below grade§ | 44 | 35 | 67 | 62 |
| 5. % of total students (line 4/line 1) | 16% | 18% | 20% | 25% |

*Spring 1977 and spring 1978 for 1977-78
Spring 1978 and spring 1979 for 1978-79

†Spring 1977 for 1977-78 and spring 1978 for 1978-79

§Spring 1978 for 1977-78 and spring 1979 for 1978-79

## Attitudinal and Behavioral Findings

Results of teacher, student, and parent surveys administered in 1978 and 1979 are outlined below.

### Teachers

- From 1978 to 1979, student attitudes and behaviors and teacher and the principal's attitudes toward reading improved at the Special Emphasis school. (Tables 5.37 and 5.38)
- From 1978 to 1979, student attitudes and behaviors showed positive change, however, change in 1979 is not as great as in 1978 at the comparison school. (Tables 5.37 and 5.38)
- From 1978 to 1979, fewer teachers thought their colleagues' and the principal's attitudes toward reading showed improvement at the comparison school. (Table 5.37)
- From 1978 to 1979, teacher concerns or problems resulting from project participation diminished at the Special Emphasis school. (Table 5.39)
- From 1978 to 1979, teacher concerns resulting from project participation decreased at the comparison school, however, the majority of teachers remained dissatisfied with their role. (Table 5.39)

### Students and Parents

- In 1978, grade 3 students at the Special Emphasis and comparison schools reflected similar reading attitudes and behaviors. (Table 5.40)
- In 1979, more Special Emphasis third graders reported that reading was fun than did comparison students. (Table 5.40)

- In 1978 and 1979, fourth, fifth, and sixth grade students show similar reading attitudes and behaviors at both schools. (Table 5.41)
- In 1978 and 1979, comparison school parents report a higher incidence of school-arranged parent-teacher conferences. (Table 5.42)

Data from which these conclusions were drawn are contained in Tables 5.37-5.42.

## Residual Effects of Special Emphasis

District officials felt that all the objectives of Special Emphasis had been met. As a result of the Special Emphasis experience, the district will demand more reading preparation for its new teachers and will set guidelines for reading programs in primary grades. The skill mastery record keeping system installed at the project school will be retained and replicated in other district schools. Special Emphasis was, to some extent, responsible for the district's decision to increase its reading budget over the past 3 years. School administrators and staff felt that they have a better understanding of the role of reading in the curriculum and that reading levels can be improved. The key elements of Special Emphasis have been incorporated into the ongoing Title I program. As a result of the project, teachers appeared to be inclined to seek advice and assistance from reading specialists in teaching reading within their classrooms. This situation stands in contrast to the situation found at the comparison school where the reading specialist appears to be viewed as an adjunct to the school reading program and is not regularly sought out by teachers for assistance. The district's reading supervisor no longer sees the need for "pull out" programs in the primary grades, since the use of reading specialists within the classroom has been so successful. Sixty-seven percent of the teachers in the experimental school predicted residual effects in teacher practices, chiefly in the use of materials, skills assessment, and in the adoption of learning stations and instructional grouping within the classroom. Parent volunteers were incorporated into the school environment and became aides in the instructional program. School and district personnel expect parent involvement to be extended in future years.

### TABLE 5.37
### TEACHERS' ASSESSMENTS OF ATTITUDES*

Site: TEXAS
School: SPECIAL EMPHASIS

| Teachers' Assessment of: \ Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Students' attitudes toward reading | 1978 | 52 | 38 | - | - | 10 |
| | 1979 | 60 | 5 | 5 | 30 | - |
| Teachers' attitudes toward reading instruction | 1978 | 48 | 33 | 10 | - | 10 |
| | 1979 | 70 | 5 | 5 | 15 | 5 |
| Principals' attitudes toward reading program | 1978 | 14 | 52 | 10 | - | 24 |
| | 1979 | 20 | 45 | 10 | 25 | - |

School: COMPARISON

| Teachers' Assessment of: \ Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Students' attitudes toward reading | 1978 | 72 | 28 | - | - | - |
| | 1979 | 74 | 17 | - | 4 | 4 |
| Teachers' attitudes toward reading instruction | 1978 | 68 | 28 | 4 | - | - |
| | 1979 | 48 | 39 | 4 | 4 | 4 |
| Principals' attitudes toward reading program | 1978 | 52 | 40 | - | - | 8 |
| | 1979 | 30 | 35 | - | 30 | 4 |

*Non-response or rounding estimates are responsible for row totals below or above 100%.

# TABLE 5.38

## TEACHERS' ASSESSMENTS OF STUDENT READING BEHAVIORS*

**Site:** TEXAS

**School:** SPECIAL EMPHASIS

| Teachers' Assessment of Student Reading Behaviors / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Time spent reading in class | 1978 | 43 | 48 | - | - | 10 |
| | 1979 | 60 | 30 | - | 10 | - |
| Time spent reading outside of class | 1978 | 29 | 57 | - | - | - |
| | 1979 | 40 | 25 | 10 | 25 | - |
| Library and/or classroom book usage | 1978 | 38 | 52 | - | - | 10 |
| | 1979 | 55 | 30 | 5 | 10 | - |

**School:** COMPARISON

| Teachers' Assessment of Student Reading Behaviors / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Time spent reading in class | 1978 | 96 | 4 | - | - | - |
| | 1979 | 70 | 26 | - | - | 4 |
| Time spent reading outside of class | 1978 | 72 | 24 | - | - | 4 |
| | 1979 | 70 | 13 | - | 13 | 4 |
| Library and/or classroom book usage | 1978 | - | - | - | - | - |
| | 1979 | 74 | 17 | - | 4 | 4 |

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* Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.39

## TEACHER CONCERNS RESULTING FROM SPECIAL EMPHASIS INVOLVEMENT*

Site: TEXAS

School: SPECIAL EMPHASIS

| | Year | Major Problem % | Minor Problem % | Not A Problem % |
|---|---|---|---|---|
| Teacher dissatisfaction with project objectives | 1978 | 19 | 33 | 33 |
| | 1979 | - | 25 | 70 |
| Conflict between project objectives and other district objectives | 1978 | 5 | 29 | 52 |
| | 1979 | 5 | 40 | 50 |
| Teacher feelings that reading is emphasized at expense of other programs | 1978 | 10 | 24 | 57 |
| | 1979 | 5 | 30 | 60 |
| Conflict between teachers and reading specialists | 1978 | 14 | 38 | 33 |
| | 1979 | 5 | 15 | 75 |

School: COMPARISON

| | Year | Major Problem % | Minor Problem % | Not A Problem % |
|---|---|---|---|---|
| Teacher resentment of administering tests to students not benefiting from the project | 1978 | 28 | 56 | 16 |
| | 1979 | 17 | 39 | 35 |
| Teacher resentment of extra work without receiving new materials or other support | 1978 | 44 | 48 | 8 |
| | 1979 | 39 | 26 | 30 |
| Parental complaints about testing | 1978 | 12 | 36 | 52 |
| | 1979 | 4 | 17 | 70 |
| Teacher feelings that reading is emphasized at expense of other programs | 1978 | 4 | 28 | 64 |
| | 1979 | 4 | 22 | 65 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.40

## STUDENT ATTITUDES AND BEHAVIORS REGARDING READING - GRADE 3*

Site: TEXAS

Year: 1978

| | School | Yes % | Some-times % | No % |
|---|---|---|---|---|
| Reading is fun | Special Emphasis | 39 | 55 | 6 |
| | Comparison | 41 | 51 | 6 |
| I like to read during my free time | Special Emphasis | 55 | 36 | 9 |
| | Comparison | 63 | 31 | 5 |
| I like my reading class | Special Emphasis | 62 | 20 | 4 |
| | Comparison | 58 | 27 | 13 |
| I read only when I have to | Special Emphasis | 31 | 30 | 40 |
| | Comparison | 41 | 28 | 29 |

Year: 1979

| | School | Yes % | Some-times % | No % |
|---|---|---|---|---|
| Reading is fun | Special Emphasis | 75 | 18 | 3 |
| | Comparison | 57 | 39 | 4 |
| I like to read during my free time | Special Emphasis | 48 | 42 | 6 |
| | Comparison | 43 | 47 | 9 |
| I like my reading class | Special Emphasis | 69 | 16 | 11 |
| | Comparison | 79 | 15 | 6 |
| I read only when I have to | Special Emphasis | 32 | 25 | 39 |
| | Comparison | 43 | 29 | 28 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.41

## STUDENT ATTITUDES AND BEHAVIORS REGARDING READING - GRADES 4-6*

**Site:** TEXAS

**Year:** 1978

| Reading Attitudes | School | Yes % | Some-Times % | No % |
|---|---|---|---|---|
| Do you like to read? | Special Emphasis | 47 | 50 | 2 |
| | Comparison | 44 | 52 | 4 |
| Do you read better this year than last year? | Special Emphasis | 76 | 18 | 5 |
| | Comparison | 78 | 11 | 10 |
| **Reading Habits** | **School** | **0 %** | **1-5 %** | **6+ %** |
| How many hours do you spend reading outside of school per week? | Special Emphasis | 17 | 62 | 19 |
| | Comparison | 14 | 57 | 28 |
| How many books have you read during the past month? | Special Emphasis | 3 | 31 | 65 |
| | Comparison | 8 | 29 | 62 |

**Year:** 1979

| Reading Attitudes | School | Yes % | Some-Times % | No % |
|---|---|---|---|---|
| Do you like to read? | Special Emphasis | 49 | 50 | 1 |
| | Comparison | 48 | 49 | 2 |
| Do you read better this year than last year? | Special Emphasis | 91 | - | 8 |
| | Comparison | 88 | - | 11 |
| **Reading Habits** | **School** | **0 %** | **1-5 %** | **6+ %** |
| How many hours do you spend reading outside of school per week? | Special Emphasis | 13 | 70 | 16 |
| | Comparison | 15 | 61 | 23 |
| How many books have you read during the past month? | Special Emphasis | 5 | 25 | 69 |
| | Comparison | 4 | 33 | 63 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.42

## SUMMARY OF PARENT SURVEY*

Site: TEXAS

Year: 1978

| | School | Yes % | No % | Cannot Say % |
|---|---|---|---|---|
| Does your child share books with you or your family? | Special Emphasis | 79 | 18 | 2 |
| | Comparison | 78 | 18 | 2 |
| Does the school set up parent/teacher conferences? | Special Emphasis | 37 | 50 | 11 |
| | Comparison | 58 | 32 | 7 |
| Have you worked as a volunteer in your child's school this year? | Special Emphasis | 7 | 80 | 2 |
| | Comparison | 7 | 80 | 3 |

Year: 1979

| | School | Yes % | No % | Cannot Say % |
|---|---|---|---|---|
| Does your child share books with you or your family? | Special Emphasis | 82 | 13 | 3 |
| | Comparison | 87 | 11 | 1 |
| Does the school set up parent/teacher conferences? | Special Emphasis | 46 | 32 | 21 |
| | Comparison | 69 | 19 | 11 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## WEST VIRGINIA

### Summary

The ANCOVA for the "whole grade" and "below mean" cohort groups in West Virginia showed scattered instances of significant differences--some favoring the Special Emphasis group, some favoring the comparison group. In the "below mean" analysis, the sixth grade Special Emphasis group had statistically significant differences in the adjusted posttest scaled scores in project years 1977-78 and 1978-79. The treatment and the comparison schools had comparable increases in students reading 1 or more years below grade level over the 1977-79 period, with the comparison school registering a decrease of 1% during 1977-78.

Approximately half of the Special Emphasis school classroom teachers said that they will continue to employ reading instruction methods used in Special Emphasis.

The following subsections describe in detail the project outcomes for West Virginia.

### Covariance Analysis of "Whole Grade" Cohort Groups

The summary of the ANCOVA for each grade in West Virginia Special Emphasis and comparison schools is contained in Table 5.43, ANCOVA Impact Summary. Complete data can be found in the tables contained in Appendixes E and F. For project year 1977-78, statistically significant differences in the adjusted posttest scaled scores were identified for grades 4 and 5. In both instances, the adjusted posttest scaled scores for the comparison group exceeded those for the Special Emphasis group. The average observed changes in grade equivalent for the comparison group were 1.9 at grade 4 and 1.4 for grade 5; for the Special Emphasis group, .9 and .05, respectively, for grades 4 and 5. For the fourth grade, serious ceiling effects were encountered in the pre- and posttest for the Special Emphasis group and the posttest of the comparison group precluding interpretation of the observed change in grade equivalent. For the fifth grade, there were ceiling effects on the pretest--resulting in an overestimate of the true change in grade equivalent.

## TABLE 5.43

## ANCOVA IMPACT SUMMARY

Site: WEST VIRGINIA

| WHOLE GRADE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROJECT YEAR 1977-1978 | | | | | PROJECT YEAR 1978-1979 | | | | | PROJECT YEARS 1977-1979 | | | | |
| Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. | Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. | Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. |
| 2 | S.E.<br>C. | N.S. | - | +0.8<br>+0.8 | 2 | S.E.<br>C. | .01 | C. | +0.6<br>+0.8 | 2 | S.E.<br>C. | | | |
| 3 | S.E.<br>C. | N.S. | - | +1.6<br>+1.8 | 3 | S.E.<br>C. | N.S. | - | +1.1<br>+0.9 | 3 | S.E.<br>C. | N.S. | - | +1.9<br>+1.6 |
| 4 | S.E.<br>C. | <.01 | C. | +0.9<br>+1.9 | 4 | S.E.<br>C. | <.01 | S.E. | +1.1<br>+0.1 | 4 | S.E.<br>C. | .04 | S.E. | +2.7<br>+1.8 |
| 5 | S.E.<br>C. | .01 | C. | +0.5<br>+1.4 | 5 | S.E.<br>C. | N.S. | - | +1.1<br>+1.1 | 5 | S.E.<br>C. | .04 | C. | +1.8<br>+2.2 |
| 6 | S.E.<br>C. | N.S. | - | +2.6<br>+2.1 | 6 | S.E.<br>C. | N.S. | - | +0.9<br>+0.3 | 6 | S.E.<br>C. | N.S. | - | +1.3<br>+1.8 |

| BELOW GRADE MEAN | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| PROJECT YEAR 1977-1978 | | | | | PROJECT YEAR 1978-1979 | | | | |
| Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. | Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. |
| 2 | S.E.<br>C. | N.S. | - | +1.1<br>+0.8 | 2 | S.E.<br>C. | N.S. | - | +0.7<br>+0.8 |
| 3 | S.E.<br>C. | N.S. | - | +1.5<br>+1.3 | 3 | S.E.<br>C. | <.01 | C. | +0.7<br>+1.2 |
| 4 | S.E.<br>C. | .03 | C. | +0.7<br>+1.3 | 4 | S.E.<br>C. | <.01 | S.E. | +1.0<br>+0.1 |
| 5 | S.E.<br>C. | N.S. | - | +0.6<br>+0.4 | 5 | S.E.<br>C. | N.S. | - | +0.7<br>+0.8 |
| 6 | S.E.<br>C. | .02 | S.E. | +2.5<br>+1.5 | 6 | S.E.<br>C. | <.01 | S.E. | +1.2<br>+0.1 |

For project year 1978-79, the ANCOVA indicated statistically significant differences for grade 2 favoring the comparison group and for grade 4 favoring the Special Emphasis group. The average observed change in grade equivalent for grade 2 was .6 years for the Special Emphasis group and .8 years for the comparison group. The average observed change in grade equivalent for grade 4 was 1.1 for the Special Emphasis group and .1 years for the comparison group. Attention should be directed to the presence of ceiling effects for the grade 2 posttest scores resulting in an underestimate of the true change and for both pre- and posttests for the grade 4 Special Emphasis group and for the posttest for the comparison group indicating that the observed change may not be a good indicator of the true change.

For the period 1977-79, the ANCOVA identified a significant difference for grade 4 favoring the Special Emphasis group and for grade 5 favoring the comparison group. This result parallels the ANCOVA results for the individual project years. The average observed change in grade equivalent over the 2-year period was 2.7 years for the grade 4 Special Emphasis group vs. 1.8 years for the comparison group, and 2.2 years for the grade 5 comparison group vs. 1.8 years for the Special Emphasis group. Ceiling effects were encountered for both grade 4 groups and for the grade 5 Special Emphasis group on the pre- and posttest.

Covariance Analysis of "Below Mean" Cohort Groups

Table 5.43 provides a summary of results from the below mean ANCOVA tables contained in Appendix F. For project year 1977-78, the ANCOVA identified statistically significant differences for grades 4 and 6. The mean adjusted posttest scaled scores of the grade 4 comparison group exceeded that of the Special Emphasis group. For grade 6, the mean adjusted posttest scaled score of the Special Emphasis group exceeded that of the comparison group. The average observed change in grade equivalent for the grade 4 comparison group was 1.3 years compared with .7 for the Special Emphasis group. The average observed change in grade equivalent for grade 6 was 2.5 for the Special Emphasis group vs. 1.5 for the comparison group--both educationally significant changes.

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For project year 1978-79, the ANCOVA for the "below mean" cohort groups indentified statistically significant differences at grades 3, 4, and 6. The adjusted posttest scaled scores of the Special Emphasis group exceeded those of the comparison group at grades 4 and 6; the reverse was true at grade 3. The average observed change in grade equivalent for grade 3 was 1.2 years for the comparison "below mean" group vs. .7 years for the Special Emphasis "below mean" group, for grade 4 it was 1.0 years for the Special Emphasis group vs. 0.1 years for the comparison group, and for grade 6 it was 1.2 years for the Special Emphasis group vs. 0.1 for the comparison group.

## Trend Analysis of Students Reading 1 or More Years Below Grade Level

Table 5.44, Trend Analysis of Students Reading 1 or More Years Below Grade Level, combines data from Tables D.14-16 in Appendix D to provide a trend analysis of percentages of students in grade cohorts reading 1 or more years below grade level.

### TABLE 5.44

### TREND ANALYSIS OF STUDENTS READING 1 OR MORE YEARS BELOW GRADE LEVEL

Site: WEST VIRGINIA

| | Treatment School | | | Comparison School | | |
|---|---|---|---|---|---|---|
| Grade | Spring 1977 | Spring 1978 | Spring 1979 | Spring 1977 | Spring 1978 | Spring 1979 |
| | % | % | % | % | % | % |
| 2 | 19 | 6 | 5 | 32 | 22 | 21 |
| 3 | 26 | 20 | 37 | 32 | 26 | 40 |
| 4 | 39 | 33 | 42 | 50 | 26 | 50 |
| 5 | 69 | 51 | 47 | 63 | 56 | 52 |
| 6 | 59 | 37 | 56 | 63 | 49 | 52 |
| School Total | 36 | 24 | 29 | 40 | 30 | 37 |

In almost all cases, as students progress in grade level a larger percentage of students read 1 or more years below grade level. The exception to this general trend occurs for both schools between grade 5 students in spring 1977 and grade 6 students in spring 1978. Table D.14 in Appendix D shows that for students tested at both points there was an improvement in students who read 1 or more years below grade level in spring 1977 from 29 students to 16 students in spring 1978 for the Special Emphasis school and from 29 students to 20 students for the comparison school. In addition, there were no grade 6 students in either school for 1977-78 who fell 1 or more years below grade level.

Attention should be directed to the drop in the percentage of grade 2 students reading 1 or more years below grade level from spring 1977 to spring 1979, from 19% to 5% for the treatment school and from 32% to 21% for the comparison school.

Table 5.45, Numbers of Students Reading 1 or More Years Below Grade Level, shows similar patterns for both schools between project years 1977-78 and 1978-79 in the change in percentage of students reading 1 or more years below grade level.

In 1977-78, the Special Emphasis school experienced only a 1% increase, from 27% to 28%, in the percentage of students reading 1 or more years below grade level (based on only students tested both springs). For the comparison school there was a decrease of 1%, from 32% to 31%, in the percentage of students reading below level. However, in project year 1978-79 both schools had an increase in the number of students reading 1 or more years below grade level--an 11% increase, from 20% to 31%, at the treatment school and a 14% increase, from 24% to 38%, at the comparison school.

## Attitudinal and Behavioral Findings

Teachers, students, and parents were surveyed in 1978 and 1979 regarding perceived changes in reading attitudes and behaviors. Results of these surveys from the various respondent groups are presented below.

## TABLE 5.45

## NUMBERS OF STUDENTS READING 1 OR MORE YEARS BELOW GRADE LEVEL

Site: WEST VIRGINIA

| | Treatment School | | Comparison School | |
|---|---|---|---|---|
| | Project Year | | Project Year | |
| | 1977-78 | 1978-79 | 1977-78 | 1978-79 |
| 1. Total students tested at both points* | 223 | 263 | 209 | 211 |
| **Beginning of Project Year** | | | | |
| 2. No. students tested > 1 year below grade+ | 60 | 53 | 67 | 50 |
| 3. % of total students (line 2/line 1) | 27% | 20% | 32% | 24% |
| **End of Project Year** | | | | |
| 4. No. students tested > 1 year below grade§ | 62 | 82 | 65 | 81 |
| 5. % of total students (line 4/line 1) | 28% | 31% | 31% | 38% |

[*] Spring 1977 and spring 1978 for 1977-78
Spring 1978 and spring 1979 for 1978-79

[+] Spring 1977 for 1977-78 and spring 1978 for 1978-79

[§] Spring 1978 for 1977-78 and spring 1979 for 1978-79

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Teachers

- At the Special Emphasis school, improvement in student reading attitudes and behaviors, and teacher and principal attitudes were reported in 1978 and 1979. (Tables 5.46 and 5.47)
- At the comparison school, positive attitudinal and behavioral changes were reported for students in 1978. The percentage of positive change decreased in 1979. (Tables 5.46 and 5.47)
- At the comparison school, teacher attitudes improved in 1978 and 1979. (Table 5.46)

- At the Special Emphasis school, no major problems were reported following the implementation of the project in 1978 or 1979. (Table 5.48)
- At the comparison school, the majority of teachers expressed resentment over the extra work due to their participation in the project in 1978 and 1979. (Table 5.48)

## Students and Parents

- At the Special Emphasis and comparison school, with the exception of students who reported they read during their free time, third graders reflected similar reading attitudes and behaviors in 1979. (Tables 5.49)
- At both schools, fourth, fifth, and sixth grade students had similar reading attitudes and behaviors in 1979. (Table 5.50)

Comparison school student data for 1978 and parent data for 1978 and 1979 were not received. Special Emphasis school parent data were not received in 1979. (Table 5.51)

## Residual Effects of Special Emphasis

The West Virginia project evinced a modicum of carry over from Special Emphasis. According to district officials, the lessons and techniques employed in Special Emphasis will be used by the district reading specialists as they move on to new (other) schools. (It is the district's intention to utilize reading specialists and the Wisconsin Design at different schools, shifting schools every 1 or 2 years until all schools have received additional help in reading.) At the school level, the principal sees no continuation of Special Emphasis because of lack of resources. At the classroom level, however, 46% of the teachers claimed that they would continue to use the resource materials, skill building methods, and grouping features learned in the Special Emphasis inservice training program. Only 28% of the treatment classroom teachers had increased the number of methods of instruction by the end of the project vs. 50% of the comparison school teachers.

## TABLE 5.46

## TEACHERS' ASSESSMENTS OF ATTITUDES*

**Site:** WEST VIRGINIA

**School:** SPECIAL EMPHASIS

| Teachers' Assessment of: / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Students' attitudes toward reading | 1978 | 64 | 36 | - | - | - |
| | 1979 | 69 | 15 | - | 8 | 8 |
| Teachers' attitudes toward reading instruction | 1978 | 82 | 18 | - | - | - |
| | 1979 | 77 | 8 | 8 | 8 | - |
| Principals' attitudes toward reading program | 1978 | 82 | 18 | - | - | - |
| | 1979 | 85 | 15 | - | - | - |

**School:** COMPARISON

| Teachers' Assessment of: / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Students' attitudes toward reading | 1978 | 70 | 30 | - | - | - |
| | 1979 | 58 | 25 | - | 17 | - |
| Teachers' attitudes toward reading instruction | 1978 | 70 | 30 | - | - | - |
| | 1979 | 67 | 25 | - | 8 | - |
| Principals' attitudes toward reading program | 1978 | 30 | 50 | - | - | 20 |
| | 1979 | 17 | 33 | - | 50 | - |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.47

## TEACHERS' ASSESSMENTS OF STUDENT READING BEHAVIORS*

Site: WEST VIRGINIA

School: SPECIAL EMPHASIS

| Teachers' Assessment of Student Reading Behaviors / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Time spent reading in class | 1978 | 64 | 36 | - | - | - |
| | 1979 | 69 | 23 | - | - | 8 |
| Time spent reading outside of class | 1978 | 36 | 36 | - | 28 | - |
| | 1979 | 54 | 31 | - | 15 | - |
| Library and/or classroom book usage | 1978 | 64 | 36 | - | - | - |
| | 1979 | 54 | 39 | - | 8 | - |

School: COMPARISON

| Teachers' Assessment of Student Reading Behaviors / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Time spent reading in class | 1978 | 90 | - | - | - | 10 |
| | 1979 | 67 | 25 | - | 8 | - |
| Time spent reading outside of class | 1978 | 50 | 40 | - | - | 10 |
| | 1979 | 67 | 17 | - | 17 | - |
| Library and/or classroom book usage | 1978 | 40 | 40 | - | - | 20 |
| | 1979 | 92 | 8 | - | - | - |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.48

## TEACHER CONCERNS RESULTING FROM SPECIAL EMPHASIS INVOLVEMENT*

Site: WEST VIRGINIA

School: SPECIAL EMPHASIS

| | Year | Major Problem % | Minor Problem % | Not A Problem % |
|---|---|---|---|---|
| Teacher dissatisfaction with project objectives | 1978 | - | 18 | 82 |
| | 1979 | - | 23 | 77 |
| Conflict between project objectives and other district objectives | 1978 | - | 18 | 82 |
| | 1979 | - | 8 | 92 |
| Teacher feelings that reading is emphasized at expense of other programs | 1978 | - | 27 | 73 |
| | 1979 | - | 15 | 85 |
| Conflict between teachers and reading specialists | 1978 | - | 18 | 82 |
| | 1979 | - | 15 | 85 |

School: COMPARISON

| | Year | Major Problem % | Minor Problem % | Not A Problem % |
|---|---|---|---|---|
| Teacher resentment of administering tests to students not benefiting from the project | 1978 | 40 | 50 | - |
| | 1979 | 17 | 25 | 50 |
| Teacher resentment of extra work without receiving new materials or other support | 1978 | 30 | 40 | 20 |
| | 1979 | 42 | 25 | 33 |
| Parental complaints about testing | 1978 | - | 30 | 60 |
| | 1979 | - | - | 92 |
| Teacher feelings that reading is emphasized at expense of other programs | 1978 | - | 10 | 80 |
| | 1979 | - | 8 | 83 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.49

## STUDENT ATTITUDES AND BEHAVIORS REGARDING READING - GRADE 3*

Site: WEST VIRGINIA

Year: 1978

| | School | Yes % | Some-times % | No % |
|---|---|---|---|---|
| Reading is fun | Special Emphasis | 45 | 47 | 8 |
| | Comparison | - | - | - |
| I like to read during my free time | Special Emphasis | 63 | 33 | 4 |
| | Comparison | - | - | - |
| I like my reading class | Special Emphasis | 71 | 25 | 4 |
| | Comparison | - | - | - |
| I read only when I have to | Special Emphasis | 53 | 22 | 25 |
| | Comparison | - | - | - |

Year: 1979

| | School | Yes % | Some-times % | No % |
|---|---|---|---|---|
| Reading is fun | Special Emphasis | 78 | 17 | 5 |
| | Comparison | 87 | 13 | 0 |
| I like to read during my free time | Special Emphasis | 47 | 36 | 17 |
| | Comparison | 61 | 34 | 5 |
| I like my reading class | Special Emphasis | 81 | 15 | 3 |
| | Comparison | 87 | 13 | 0 |
| I read only when I have to | Special Emphasis | 20 | 22 | 58 |
| | Comparison | 27 | 32 | 40 |

*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.50

## STUDENT ATTITUDES AND BEHAVIORS REGARDING READING - GRADES 4-6*

Site: WEST VIRGINIA

Year: 1978

| Reading Attitudes | School | Yes % | Some-Times % | No % |
|---|---|---|---|---|
| Do you like to read? | Special Emphasis | 49 | 47 | 4 |
| | Comparison | - | - | - |
| Do you read better this year than last year? | Special Emphasis | 78 | 16 | 5 |
| | Comparison | - | - | - |
| **Reading Habits** | **School** | **0 %** | **1-5 %** | **6+ %** |
| How many hours do you spend reading outside of school per week? | Special Emphasis | 24 | 49 | 26 |
| | Comparison | - | - | - |
| How many books have you read during the past month? | Special Emphasis | 13 | 19 | 66 |
| | Comparison | - | - | - |

Year: 1979

| Reading Attitudes | School | Yes % | Some-Times % | No % |
|---|---|---|---|---|
| Do you like to read? | Special Emphasis | 43 | 53 | 4 |
| | Comparison | 53 | 44 | 2 |
| Do you read better this year than last year? | Special Emphasis | 94 | - | 5 |
| | Comparison | 91 | - | 8 |
| **Reading Habits** | **School** | **0 %** | **1-5 %** | **6+ %** |
| How many hours do you spend reading outside of school per week? | Special Emphasis | 21 | 67 | 11 |
| | Comparison | 16 | 68 | 14 |
| How many books have you read during the past month? | Special Emphasis | 3 | 38 | 58 |
| | Comparison | 5 | 45 | 48 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.51

## SUMMARY OF PARENT SURVEY*

**Site:** WEST VIRGINIA

**Year:** 1978

| | School | Yes % | No % | Cannot Say % |
|---|---|---|---|---|
| Does your child share books with you or your family? | Special Emphasis | 83 | 15 | 2 |
| | Comparison | - | - | - |
| Does the school set up parent/teacher conferences? | Special Emphasis | 44 | 31 | 24 |
| | Comparison | - | - | - |
| Have you worked as a volunteer in your child's school this year? | Special Emphasis | 4 | 83 | 3 |
| | Comparison | - | - | - |

**Year:** 1979

| | School | Yes % | No % | Cannot Say % |
|---|---|---|---|---|
| Does your child share books with you or your family? | Special Emphasis | - | - | - |
| | Comparison | - | - | - |
| Does the school set up parent/teacher conferences? | Special Emphasis | - | - | - |
| | Comparison | - | - | - |
| Have you worked as a volunteer in your child's school this year? | Special Emphasis | - | - | - |
| | Comparison | - | - | - |

*Non-response or rounding estimates are responsible for row totals below or above 100%.

## CALIFORNIA

### Summary

The ANCOVA for the California site indicated no consistent statistically significant differences. In viewing the ANCOVA results, it should be noted that the sample sizes are small. Both the treatment and comparison schools experienced approximately a 17-18% increase in the percentage of students reading 1 or more years below grade level during the 1978-79 project year.

Potential for carry over from this project appears to be limited to teachers' continued use of the project materials.

The following subsections describe in detail the project outcomes for California.

### Covariance Analysis of "Whole Grade" Cohort Groups

The summary of the ANCOVA for each grade in the Special Emphasis and comparison schools in California is contained in Table 5.52, ANCOVA Impact Summary. For project year 1977-78, a statistically significant difference in the adjusted posttest scaled score grade 4 was identified for the adjusted posttest scaled score of the Special Emphasis group exceeded that of the comparison group. The average observed change in grade equivalent was .8 years for the grade 4 Special Emphasis group and .3 years for the comparison group. Attention should be directed to the presence of ceiling effects in the pre- and posttest scores of the Special Emphasis group and in the posttest score of the comparison group indicated that the observed change in grade equivalent may not be a good estimator of the true change.

For project year 1978-79, the ANCOVA indicated a statistically significant difference for grade 3 in which the adjusted posttest scaled score for the comparison group exceeded that of the Special Emphasis group. The average observed change in grade equivalent for the comparison group was 1.3 years vs. .7 years for the Special

## TABLE 5.52

## ANCOVA IMPACT SUMMARY

**Site:** CALIFORNIA

| WHOLE GRADE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROJECT YEAR 1977-1978 | | | | | PROJECT YEAR 1978-1979 | | | | | PROJECT YEARS 1977-1979 | | | | |
| Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. | Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. | Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. |
| 2 | S.E.<br>C. | N.S. | - | +0.6<br>+0.5 | 2 | S.E.<br>C. | N.S. | - | +0.7<br>+0.4 | 2 | S.E.<br>C. | N/A | | |
| 3 | S.E.<br>C. | N.S. | - | +0.3<br>+0.3 | 3 | S.E.<br>C. | <.01 | C. | +0.7<br>+1.3 | 3 | S.E.<br>C. | N/A | | |
| 4 | S.E.<br>C. | <.01 | S.E. | +0.8<br>+0.3 | 4 | S.E.<br>C. | N.S. | - | +0.4<br>+0.6 | 4 | S.E.<br>C. | N/A | | |
| 5 | S.E.<br>C. | N.S. | - | +0.7<br>+0.4 | 5 | S.E.<br>C. | N.S. | - | +0.9<br>+0.6 | 5 | S.E.<br>C. | N/A | | |
| 6 | S.E.<br>C. | N.S. | - | +1.2<br>+1.6 | 6 | S.E.<br>C. | N.S. | - | +2.2<br>+1.2 | 6 | S.E.<br>C. | N/A | | |

| BELOW GRADE MEAN | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| PROJECT YEAR 1977-1978 | | | | | PROJECT YEAR 1978-1979 | | | | |
| Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. | Grade Initial Year | School | Sig. of F | Direction of Impact | Change in Gr. Equiv. |
| 2 | S.E.<br>C. | N.S. | - | +0.6<br>+0.6 | 2 | S.E.<br>C. | N.S. | - | +0.7<br>+0.4 |
| 3 | S.E.<br>C. | N.S. | - | +0.4<br>+0.3 | 3 | S.E.<br>C. | <.01 | C. | +0.5<br>+1.4 |
| 4 | S.E.<br>C. | <.01 | S.E. | +0.9<br>+0.2 | 4 | S.E.<br>C. | N.S. | - | +0.4<br>+0.5 |
| 5 | S.E.<br>C. | N.S. | - | +0.3<br>+0.2 | 5 | S.E.<br>C. | N.S. | - | +0.8<br>+0.6 |
| 6 | S.E.<br>C. | N.S. | - | +1.3<br>+1.0 | 6 | S.E.<br>C. | N.S. | - | +1.4<br>+0.9 |

Emphasis group. Again, ceiling effects were encountered in both pre- and posttest scores of the comparison group and the pretest score of the Special Emphasis group.

## Covariance Analysis of "Below Mean" Cohort Groups

For project years 1977-78 and 1978-79, there were statistically significant differences in the "below mean" cohort groups which paralleled the "whole group" ANCOVA results. The average observed change in grade equivalents for each "below me[illegible] group was approximately equal to that of the corresponding "whole gra[illegible]roup.

## Trend Analysis of Students Reading 1 or More Years Below Grade Level

Table 5.53, Trend Analysis of Students Reading 1 or More Years Below Grade Level, combines data contained in Tables D.17 and D.18 in Appendix D. It shows that, for the most part, more students dropped below level as they progressed in school grades from 1978 to 1979. The only exception occurs in the treatment school between the fourth grade in Spring 1978 and the fifth grade in Spring 1979 where the percentage of students reading 1 or more years below grade level fell from 59% to 39%. Referring to Table D.17 in Appendix D, the reason for the drop in percentage is the change in student body rather than the improvement of students during the project year.

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TABLE 5.53

TREND ANALYSIS OF STUDENTS READING 1 OR MORE YEARS BELOW GRADE LEVEL

Site: CALIFORNIA

| | Treatment School | | | Comparison School | | |
|---|---|---|---|---|---|---|
| Grade | Spring 1977 | Spring 1978 | Spring 1979 | Spring 1977 | Spring 1978 | Spring 1979 |
| | % | % | % | % | % | % |
| 2 | N/A | 5 | 3 | N/A | 4 | 31 |
| 3 | N/A | 10 | 21 | N/A | 11 | 36 |
| 4 | N/A | 21 | 61 | N/A | [illegible] | 48 |
| 5 | N/A | 59 | 45 | N/A | 73 | 68 |
| 6 | N/A | 57 | 39 | N/A | 71 | 79 |
| School Total | N/A | 24 | 28 | N/A | 39 | 49 |

Table 5.54, Number of Students Reading 1 or More Years Below Grade Level, shows that in the treatment school, the percentage of students reading 1 or more years below grade level (based on only those students tested each spring) rose from 15% to 32%, a 17% increase. In the comparison school, the percentage of students reading 1 or more years below grade level rose from 28% to 46%, an 18% increase.

## TABLE 5.54

## NUMBER OF STUDENTS READING 1 OR MORE YEARS BELOW GRADE LEVEL

Site: CALIFORNIA

| | Treatment School | | Comparison School | |
|---|---|---|---|---|
| | Project Year | | Project Year | |
| | 1977-78 | 1978-79 | 1977-78 | 1978-79 |
| 1. Total students tested at both points* | N/A | 116 | N/A | 116 |
| Beginning of Project Year | | | | |
| 2. No. students tested > 1 year below grade+ | N/A | 17 | N/A | 33 |
| 3. % of total students (line 2/line 1) | N/A | 15% | N/A | 28% |
| End of Project Year | | | | |
| 4. No. students tested > 1 year below grade§ | N/A | 37 | N/A | 53 |
| 5. % of total students (line 4/line 1) | N/A | 32% | N/A | 46% |

*Spring 1977 and spring 1978 for 1977-78
Spring 1978 and spring 1979 for 1978-79

+Spring 1977 for 1977-78 and spring 1978 for 1978-79

§Spring 1978 for 1977-78 and spring 1979 for 1978-79

## Attitudinal and Behavioral Findings

Teachers, students, and parents were surveyed in 1978 and 1979 regarding reading attitudes and related behaviors.

Particular findings of interest from the various respondent groups are highlighted below.

### Teachers

- In 1978, all Special Emphasis school teachers reported improvement in student reading attitudes and behaviors; in 1979, the percentage of teachers reporting improvement dropped. (Tables 5.55 and 5.56)
- In 1978 and 1979, half the Special Emphasis school teachers reported that the attitudes of their colleagues toward reading instruction showed no change. (Table 5.55)
- In 1978 and 1979, half the Special Emphasis school teachers reported improvement in the principals' attitudes toward the reading program. (Table 5.55)
- From 1978 to 1979, student attitudes and behaviors and teacher and principal attitudes were reported to have improved at the comparison school. (Tables 5.55 and 5.56)
- In 1978 and 1979, one third of the teachers at the Special Emphasis school felt that reading was receiving too much attention and detracting from other program areas. (Table 5.57)
- In 1978 and 1979, the majority of teachers at the comparison school resented the SDRT testing and extra work Special Emphasis imposed on them. (Table 5.57)

### Students and Parents

- In 1978, a higher percentage of Special Emphasis school third graders thought reading was fun than did the comparison group. (Table 5.58)

- In 1978, fewer Special Emphasis school third graders read only when they had to. (Table 5.58)
- In 1978 and 1979, fourth through sixth graders had similar reading attitudes and behaviors except for the amount of time reading outside of school. (Table 5.59)
- In 1978, data collected from Special Emphasis and comparison school parents reveals no observable differences. (Table 5.60)

Tables 5.55-5.60 present the attitudinal and behavioral data from which these findings were extracted. No comparisons of third grade or parent data for 1979 can be made due to the lack of data from the Special Emphasis school.

## Residual Effects of Special Emphasis

Residual effects in California were difficult to assess. Special Emphasis at the California site, it seems, was more characterized by enthusiasm and esprit d'corps than by reading techniques or instructional philosophy. Half of the teachers did attest that they would continue to utilize materials from Special Emphasis. Perhaps participants may attempt to enkindle the enthusiasm they experienced in Special Emphasis in future assignments.

## TABLE 5.55

## TEACHERS' ASSESSMENTS OF ATTITUDES*

Site: CALIFORNIA

School: SPECIAL EMPHASIS

| Teachers' Assessment of: / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Students' attitudes toward reading | 1978 | 100 | - | - | - | - |
| | 1979 | 67 | 17 | - | 17 | - |
| Teachers' attitudes toward reading instruction | 1978 | 50 | 50 | - | - | - |
| | 1979 | 33 | 50 | - | 17 | - |
| Principals' attitudes toward reading program | 1978 | 50 | 33 | - | 17 | - |
| | 1979 | 50 | 33 | - | - | 17 |

School: COMPARISON

| Teachers' Assessment of: / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Students' attitudes toward reading | 1978 | 60 | 10 | - | - | 30 |
| | 1979 | 83 | 17 | - | - | - |
| Teachers' attitudes toward reading instruction | 1978 | 30 | 30 | 20 | - | 20 |
| | 1979 | 50 | 17 | - | 33 | - |
| Principals' attitudes toward reading program | 1978 | 30 | 20 | 10 | - | 40 |
| | 1979 | 50 | - | - | 33 | 17 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.56

## TEACHERS' ASSESSMENTS OF STUDENT READING BEHAVIORS

Site: CALIFORNIA

School: SPECIAL EMPHASIS

| Teachers' Assessment of Student Reading Behaviors / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Time spent reading in class | 1978 | 100 | - | - | - | - |
| | 1979 | 100 | - | - | - | - |
| Time spent reading outside of class | 1978 | 100 | - | - | - | - |
| | 1979 | 50 | 33 | - | - | 17 |
| Library and/or classroom book usage | 1978 | 100 | - | - | - | - |
| | 1979 | 67 | 33 | - | - | - |

School: COMPARISON

| Teachers' Assessment of Student Reading Behaviors / Effect | | Positive Change % | No Change % | Negative Change % | Cannot Tell % | No Response % |
|---|---|---|---|---|---|---|
| Time spent reading in class | 1978 | 60 | 20 | - | - | 20 |
| | 1979 | 100 | - | - | - | - |
| Time spent reading outside of class | 1978 | 20 | 40 | - | - | 40 |
| | 1979 | - | - | - | 83 | 17 |
| Library and/or classroom book usage | 1978 | 40 | 40 | - | - | 20 |
| | 1979 | 83 | 17 | - | - | - |

## TABLE 5.57

## TEACHER CONCERNS RESULTING FROM SPECIAL EMPHASIS INVOLVEMENT*

Site: CALIFORNIA

School: SPECIAL EMPHASIS

| | Year | Major Problem % | Minor Problem % | Not A Problem % |
|---|---|---|---|---|
| Teacher dissatisfaction with project objectives | 1978 | - | 17 | 83 |
| | 1979 | - | - | 83 |
| Conflict between project objectives and other district objectives | 1978 | - | - | 100 |
| | 1979 | - | - | 83 |
| Teacher feelings that reading is emphasized at expense of other programs | 1978 | - | 33 | 67 |
| | 1979 | - | 33 | 50 |
| Conflict between teachers and reading specialists | 1978 | - | - | 100 |
| | 1979 | - | 17 | 67 |

School: COMPARISON

| | Year | Major Problem % | Minor Problem % | Not A Problem % |
|---|---|---|---|---|
| Teacher resentment of administering tests to students not benefiting from the project | 1978 | 50 | 20 | 10 |
| | 1979 | - | 67 | 33 |
| Teacher resentment of extra work without receiving new materials or other support | 1978 | 60 | 10 | 10 |
| | 1979 | 17 | 50 | 33 |
| Parental complaints about testing | 1978 | 20 | 10 | 40 |
| | 1979 | - | - | 100 |
| Teacher feelings that reading is emphasized at expense of other programs | 1978 | 20 | 10 | 50 |
| | 1979 | - | - | 100 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.58

## STUDENT ATTITUDES AND BEHAVIORS REGARDING READING - GRADE 3*

**Site:** CALIFORNIA

**Year:** 1978

|  | School | Yes % | Some-times % | No % |
|---|---|---|---|---|
| Reading is fun | Special Emphasis | 53 | 43 | 3 |
|  | Comparison | 30 | 53 | 13 |
| I like to read during my free time | Special Emphasis | 57 | 43 | 0 |
|  | Comparison | 57 | 34 | 6 |
| I like my reading class | Special Emphasis | 57 | 33 | 10 |
|  | Comparison | 53 | 26 | 13 |
| I read only when I have to | Special Emphasis | 30 | 13 | 57 |
|  | Comparison | 51 | 23 | 23 |

**Year:** 1979

|  | School | Yes % | Some-times % | No % |
|---|---|---|---|---|
| Reading is fun | Special Emphasis | - | - | - |
|  | Comparison | 71 | 25 | 4 |
| I like to read during my free time | Special Emphasis | - | - | - |
|  | Comparison | 37 | 54 | [illegible] |
| I like my reading class | Special Emphasis | - | - | - |
|  | Comparison | 79 | 12 | 8 |
| I read only when I have to | Special Emphasis | - | - | - |
|  | Comparison | 33 | 46 | 21 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## TABLE 5.59

## STUDENT ATTITUDES AND BEHAVIORS REGARDING READING - GRADES 4-6*

Site: CALIFORNIA

Year: 1978

| Reading Attitudes | School | Yes % | Some-Times % | No % |
|---|---|---|---|---|
| Do you like to read? | Special Emphasis | 58 | 40 | 1 |
| | Comparison | 50 | 41 | 1 |
| Do you read better this year than last year? | Special Emphasis | 82 | 7 | 9 |
| | Comparison | 74 | 11 | 9 |

| Reading Habits | School | 0 % | 1-5 % | 6+ % |
|---|---|---|---|---|
| How many hours do you spend reading outside of school per week? | Special Emphasis | 4 | 67 | 25 |
| | Comparison | 25 | 57 | 12 |
| How many books have you read during the past month? | Special Emphasis | 3 | 24 | 67 |
| | Comparison | 2 | 33 | 59 |

Year: 1979

| Reading Attitudes | School | Yes % | Some-Times % | No % |
|---|---|---|---|---|
| Do you like to read? | Special Emphasis | 55 | 45 | - |
| | Comparison | 58 | 37 | 2 |
| Do you read better this year than last year? | Special Emphasis | 97 | - | 3 |
| | Comparison | 85 | - | 10 |

| Reading Habits | School | 0 % | 1-5 % | 6+ % |
|---|---|---|---|---|
| How many hours do you spend reading outside of school per week? | Special Emphasis | 5 | 77 | 18 |
| | Comparison | 26 | 54 | 18 |
| How many books have you read during the past month? | Special Emphasis | 1 | 14 | 85 |
| | Comparison | 5 | 31 | 60 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

TABLE 5.60

SUMMARY OF PARENT SURVEY*

Site: CALIFORNIA

Year: 1978

| | School | Yes % | No % | Cannot Say % |
|---|---|---|---|---|
| Does your child share books with you or your family? | Special Emphasis | 87 | 11 | 1 |
| | Comparison | 71 | 19 | 2 |
| Does the school set up parent/teacher conferences? | Special Emphasis | 55 | 35 | 7 |
| | Comparison | 48 | 34 | 10 |
| Have you worked as a volunteer in your child's school this year? | Special Emphasis | 9 | 84 | 1 |
| | Comparison | 9 | 73 | 2 |

Year: 1979

| | School | Yes % | No % | Cannot Say % |
|---|---|---|---|---|
| Does your child share books with you or your family? | Special Emphasis | - | - | - |
| | Comparison | 89 | 11 | - |
| Does the school set up parent/teacher conferences? | Special Emphasis | - | - | - |
| | Comparison | 61 | 25 | 14 |

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*Non-response or rounding estimates are responsible for row totals below or above 100%.

## CROSS SITE SUMMARY

The results of the various outcome analyses for the seven sites may be used to create a total picture of the effects of the Special Emphasis concept as implemented in a variety of settings nationwide. This subsection provides a summative review of the covariance analyses, the trend analysis of students reading 1 or more years below grade level, the attitudinal and behavioral findings, and the residual effects of Special Emphasis projects. A statistical analysis of the impact data aggregated across project sites was not undertaken due to site to site differences in Special Emphasis treatment, in participants, and in criteria for participation in Special Emphasis. Despite these differences, a review of impact results for each site in light of results of other sites can provide insight into the impact of the Special Emphasis concept as carried out among the sites. Likewise, the emergence of any consistent patterns of impact or trends can be detected.

Based upon process data and observations of the study team, it was anticipated that three project sites provided the greatest potential for impact to emerge. These three sites (Louisiana, Tennessee, and Texas), implemented programs that closely conformed to Special Emphasis regulations and guidelines. These sites are called Group I sites. Group II consists of the remaining four sites (Michigan, Ohio, West Virginia, and California) at which program implementation was in question and impact results suspect. Tables in this summary section present data for Group I and Group II sites to distinguish sites which implemented the Special Emphasis Program from those which implemented marginal or questionable programs. Table 4.46 contains the data from which these groupings were determined.

### Covariance Analysis of "Whole Grade" Cohort Groups

Table 5.61 illustrates the incidence of significant differences for the "whole grade" cohort groups for each project site. Four of the seven sites, Louisiana, Michigan, Texas, and West Virginia, had significant differences between the Special Emphasis and comparison groups.

Of these sites, Louisiana and Texas both had a pattern of significant differences for grades 2 and 5 favoring the Special Emphasis groups. Both Louisiana and Texas represented Group I sites; each had highly operationalized Special Emphasis programs. At neither of these sites was there any evidence that the Special Emphasis treatment for grade 2 or grade 5 was different than that offered at other grade levels. There were no other observed patterns.

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TABLE 5.61

ANCOVA WHOLE GRADE COHORT GROUPS SUMMARY

GROUP I

| | LOUISIANA | | | TENNESSEE | | | TEXAS | | |
|---|---|---|---|---|---|---|---|---|---|
| Grade | 1977-78 | 1978-79 | 1977-79 | 1977-78 | 1978-79 | 1977-79 | 1977-78 | 1978-79 | 1977-79 |
| 2 | SE | SE | N/A | - | - | - | SE | SE | N/A |
| 3 | - | - | SE | - | - | - | - | - | - |
| 4 | - | - | - | - | - | - | - | - | - |
| 5 | SE | SE | N/A | - | - | - | - | SE | SE |
| 6 | - | - | C | - | - | - | | | |

GROUP II

| | MICHIGAN | | | OHIO | WEST VIRGINIA | | | CALIFORNIA |
|---|---|---|---|---|---|---|---|---|
| Grade | 1977-78 | 1978-79 | 1977-79 | 1977-78 | 1977-78 | 1978-79 | 1977-79 | 1978-79 |
| 2 | - | - | N/A | - | - | C | N/A | - |
| 3 | - | C | - | - | - | - | - | N/A |
| 4 | - | - | - | - | C | SE | SE | - |
| 5 | - | C | - | - | C | - | C | - |
| 6 | - | N/A | N/A | - | - | - | - | - |

Key:
SE = Significant difference, Special Emphasis group
C = Significant difference, comparison group
- = No significant difference
N/A = Data not available

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## Covariance Analysis of "Below Mean" Cohort Groups

The ANCOVA performed for the "below mean" cohort groups revealed more incidents of statistically significant differences than the "whole group" ANCOVAs, but consistent patterns of significant differences are extremely limited. Statistically significant differences emerged from the 1978-79 project year analysis in Louisiana where 4 out of 5

ANCOVAs indicated significance in favor of the Special Emphasis school at grades 2, 4, 5, and 6. The Texas site "below mean" cohort group analysis showed statistically significant differences favoring the Special Emphasis school at grade 2 for both project years 1977-78 and 1978-79. Both Louisiana and Texas are Group I sites. In all other instances, the significant differences were scattered among schools, grade levels, and project years. As Table 5.62 indicates, the incidence of significant differences occurred mainly in Louisiana and West Virginia, with the only consistent patterns present in Louisiana.

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## TABLE 5.62

## ANCOVA BELOW MEAN COHORT GROUPS SUMMARY

GROUP I

| Grade | LOUISIANA | | TENNESSEE | | TEXAS | |
|---|---|---|---|---|---|---|
| | 1977-78 | 1978-79 | 1977-78 | 1978-79 | 1977-78 | 1978-79 |
| 2 | SE | SE | - | - | SE | SE |
| 3 | - | - | - | - | - | - |
| 4 | - | SE | - | - | - | - |
| 5 | - | SE | - | - | - | - |
| 6 | - | SE | - | - | | |

GROUP II

| Grade | MICHIGAN | | OHIO | WEST VIRGINIA | | CALIFORNIA | |
|---|---|---|---|---|---|---|---|
| | 1977-78 | 1978-79 | 1977-78 | 1977-78 | 1978-79 | 1977-78 | 1978-79 |
| 2 | - | - | - | - | - | - | - |
| 3 | C | - | - | - | C | - | C |
| 4 | - | - | - | C | SE | SE | - |
| 5 | - | C | - | - | SE | - | - |
| 6 | - | - | SE | C | - | - | - |

Key: SE = Significant difference, Special Emphasis group
C = Significant difference, comparison group
- = No significant difference
N/A = Data not available

## Trend Analysis of Student Reading 1 or More Years Below Grade Level

The results of the analyses contained in the Tables of Appendix D, Frequency Analysis of Students More Than 1 Year Below Grade Level in Reading Comprehension, show that as student cohorts progress in grade levels, more students fall 1 or more years below level each succeeding year. In Ohio, however, the comparison group lost less "ground" than the Special Emphasis group and in Louisiana the Special Emphasis group did not fall below level as much as did the comparison group.

In most of the sites, the total percentage (refer to Table 5.63) of students reading 1 or more years below grade level appears to be either decreasing or holding steady from 1977 to 1978 and from 1978 to 1979 for both the Special Emphasis and comparison schools. While new second grade cohorts perform better on the SDRT each year in Louisiana, Michigan, Tennessee, Texas, and West Virginia, this does not completely account for the apparent overall "improvement" in the total percentage of students reading below level. Students leaving the observed school sample and not tested at a subsequent test point contribute to the observed improvement. In fact, a site-by-site analysis of numbers of students shows only two instances--Tennessee and West Virginia comparison schools in 1977-78--where the total school percentage of students reading 1 or more years below level decreases.

TABLE 5.63

FREQUENCY ANALYSIS OF STUDENTS MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION

| | Special Emphasis School | | | Comparison School | | |
|---|---|---|---|---|---|---|
| | 1977 | 1978 | 1979 | 1977 | 1978 | 1979 |
| GROUP I | | | | | | |
| Louisiana | 37% | 37% | 31% | 35% | 32% | 32% |
| Tennessee | 45% | 37% | 20% | 34% | 20% | 20% |
| Texas | 18% | 18% | 15% | 17% | 20% | 16% |
| GROUP II | | | | | | |
| Michigan | 38% | 37% | 31% | 44% | 40% | 29% |
| Ohio | 27% | N/A | N/A | 32% | N/A | N/A |
| West Virginia | 36% | 24% | 29% | 40% | 30% | 37% |
| California | N/A | 24% | 28% | N/A | 39% | 49% |

## Attitudinal and Behavioral Findings

The following attitudinal and behavioral findings summarize the results of the surveys of teachers, students, and parents across all sites.

- The majority of Special Emphasis and comparison school teachers' perceptions regarding changes in reading-related student attitudes and behaviors reflect improved attitudes and behaviors in 1978. The extent of teacher perceived improvement in 1979 dropped.
- No consistent pattern emerges from teachers' perceptions of their colleagues' attitudes regarding reading.
- Many teachers either declined to comment or professed a lack of knowledge regarding their school principal's attitudes toward reading.
- Teacher's problems with Special Emphasis seemed to peak in 1978 and subside in 1979. For teachers in the Special Emphasis schools, problems generally were with the over emphasis on reading to the detriment of other subjects. Teachers in the comparison schools resented the extra work which Special Emphasis imposed when they received no program benefits.
- Attitudes regarding reading and reading-related behaviors expressed by students and parents were similar in both treatment and comparison schools.

## Residual Effects of Special Emphasis

Educational intervention programs generally have as their primary objective, the improvement of student performance--oftentimes measured by test scores. Student improvement on test scores, however, is not the only measure of educationally significant outcomes. The effectiveness of an intervention program may also be measured by the effect of the program upon the attitudes of participants (children, teachers, parents), the degree of parent involvement, and/or "institutionalized" changes evidence in individual teachers, reading programs, schools, and school systems. Not only are these changes meaningful in themselves, but they also may create a climate in which long-term effects on student performance may occur.[1] Often in Federally funded experimental or demonstration programs, little or no evidence of the program or the changes it was intended to introduce remains after Federal funding ends. Occasionally, however, there are program components or entire programs that are taken over by the local agency or school and are continued after Federal funding ceases. The continuation of a program after termination of Federal funding may be regarded as one of the best indicators of program success. On the other hand, an initial commitment to continue a project beyond Federal funding may be a major determinant of program success (if, indeed, it is successful).[2] Within Special Emphasis, GRC found indications of both phenomena: Special Emphasis components continued after Federal funding because of their perceived value to the school/district; and, a decision from the outset to interalize the Special Emphasis approach into the district's reading program.

To determine the extent to which Special Emphasis had effected change, teachers were asked in the spring of 1979 what changes they had perceived in attitudes and what programmatic changes would remain after the Special Emphasis project was over. Then, in fall 1979, after the project ended, each project director, reading specialists, a sample of teachers, and a LEA official were questioned regarding tangible, residual effects of Special Emphasis. While some said that they were "waiting to see the evaluation results," others were ready to identify specific changes which they attributed to Special Emphasis.

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[1] See the Head Start Newsletter (fall 1977) report on "Parents, Children Continuity," Administration for Children, Youth, and Families, DHEW, 1977. Results of several independent studies (Irving Lazar, et al.) on the long term effects of Head Start Participation have shown significant achievement gains for former Head Start participants.

[2] Paul Berman, Milbrey Wallin McLaughlin, et al., Federal Programs Supporting Educational Change, Vol. III, Factors Affecting Implementation and Continuation (Santa Monica, California: The RAND Corporation, Report R-1589/7 HEW, 1978).

On every level--school district, school, classroom, and the home--the kinds of institutionalized carry over from Special Emphasis varied widely. The degree of certainty regarding the carry over also ranged from conjecture to documentation of fact. The greatest degree of carry over appears to have taken place in Louisiana, Ohio, Tennessee, and Texas--the sites in which school district officials were most strongly involved in the project. The level at which the greatest impact took place was at the classroom level. Only Texas and Tennessee were able to affect patterns of parent involvement.

The key factors, or combinations of factors, which promote institutionalization varied with each site. Overall, the key determinants appeared to be:

- A district official (usually the original proposal writer) took responsibility for the design and regular supervision of the project and also for making improvement in the system after the project ended. Thus, a combination of leadership and continuity from the central office was present.
- The project had specific objectives and special strategies designed to meet the objectives. In other words, there was a uniqueness to the project and not merely "more of the same" or simply a new text. In this regard, placing the reading specialist in the regular classroom, designating the specialist as a resource for the classroom teacher with time set aside for conferences, and skills assessment with specific provisions for skill building to achieve goals were among the more prominent approaches.
- Symbols of success were also important. Over the course of a 3-year project, teachers and administrators needed to see signs of progress and accomplishment such as positive test score results, more parent involvement, improved teacher morale and enthusiasm.

- Teachers had "ownership" in the project. Regardless of whether the design and initiation of the project came from the district office, the teachers and specialists needed to make a creative input to the project and have a sense that their concerns and problems were heard.

Two of the four sites which had the highest degree of project institutionalization, Louisiana and Texas, also had the only consistent patterns of statistically significant differences between Special Emphasis and comparison schools.

# APPENDIX A
# SDRT TEST HISTORY

# TABLE A.1

# SDRT TEST HISTORY

## Project Year 1977-78

Site: LOUISIANA

| Grade: | 2 | | 3 | | 4 | | 5 | | 6 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| School: | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. |
| 1. Total No. Students took SDRT (spring, fall 1977; spring 1978) | 57 | 175 | 62 | 131 | 66 | 207* | 64 | 147 | 64 | 124 | 313 | 784 |
| 2. No. Designated as Having Learning Problems | 4 | 16 | 6 | 9 | 11 | 1 | 9 | 0 | 4 | 0 | 34 | 26 |
| 3. No. took Spring/Fall 1977 SDRTs only | 17 | 47 | 11 | 34 | 11 | 110 | 13 | 47 | 12 | 38 | 64 | 276 |
| 4. No. took Spring 1978 SDRT but not Spring 1977 SDRT | 7 | 27 | 14 | 19 | 7† | 5† | 3 | 18 | 10 | 18 | 41 | 87 |
| 5. No. in Sample Size for ANCOVA Analyses (1-(2+3+4)) | 29 | 85 | 31 | 107 | 37 | 91 | 39 | 82 | 38 | 68 | 174 | 395 |

*Error in coding from Spring to Fall '77.

†Spring '78 but not Fall '77 due to coding error Spring '78

## Project Year 1978-79

| Grade: | 2 | | 3 | | 4 | | 5 | | 6 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| School: | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. |
| 1. Total No. Students took SDRT (spring, fall 1978; spring 1979) | 58 | 153 | 58 | 133 | 70 | 136 | 64 | 138 | 66 | 139 | 316 | 699 |
| 2. No. Designated as Having Learning Problems | 4 | 6 | 7 | 5 | 10 | 25 | 5 | 10 | 5 | 4 | 31 | 50 |
| 3. No. took Spring/Fall 1978 SDRTs only | 18 | 34 | 8 | 37 | 19 | 20 | 19 | 36 | 6 | 30 | 70 | 157 |
| 4. No. took Spring/Fall 1979 SDRT but not Spring 1978 SDRT | 9 | 23 | 9 | 27 | 11 | 21 | 7 | 22 | 9 | 34 | 45 | 127 |
| 5. No. in Sample Size for ANCOVA Analyses (1-(2+3+4)) | 27 | 90 | 34 | 64 | 30 | 70 | 33 | 70 | 46 | 71 | 170 | 365 |

# TABLE A.2
## SDRT TEST HISTORY

### Project Year 1977-78

**Site: MICHIGAN**

| Grade: | 2 | | 3 | | 4 | | 5 | | 6 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| School: | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. |
| 1. Total No. Students took SDRT (spring, fall 1977; spring 1978) | 164 | 145 | 146 | 123 | 131 | 109 | 119 | 126 | 133 | 112 | 693 | 615 |
| 2. No. Designated as Having Learning Problems | 22 | 4 | 8 | 11 | 6 | 4 | 11 | 5 | 7 | 5 | 54 | 29 |
| 3. No. took Spring/Fall 1977 SDRTs only | 27 | 42 | 36 | 28 | 32 | 28 | 18 | 28 | 29 | 32 | 142 | 158 |
| 4. No. took Spring 1978 SDRT only | 33 | 38 | 16 | 20 | 26 | 21 | 21 | 27 | 16 | 15 | 112 | 121 |
| 5. No. in Sample Size for ANCOVA Analyses (1-(2+3+4)) | 82 | 61 | 86 | 64 | 67 | 56 | 69 | 66 | 81 | 60 | 385 | 307 |

### Project Year 1978-79

| Grade: | 2 | | 3 | | 4 | | 5 | | 6 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| School: | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. |
| 1. Total No. Students took SDRT (spring, fall 1978; spring 1979) | 157 | 135 | 161 | 128 | 130 | 119 | 130 | 103 | N/A | N/A | 578 | 485 |
| 2. No. Designated as Having Learning Problems | 8 | 7 | 4 | 5 | 4 | 9 | 2 | 3 | N/A | N/A | 18 | 24 |
| 3. No. took Spring/Fall 1978 SDRTs only | 43 | 37 | 33 | 27 | 20 | 26 | 23 | 17 | N/A | N/A | 119 | 107 |
| 4. No. took Spring 1978 SDRT only | 24 | 26 | 29 | 25 | 24 | 18 | 26 | 19 | N/A | N/A | 103 | 88 |
| 5. No. in Sample Size for ANCOVA Analyses (1-(2+3+4)) | 82 | 65 | 95 | 71 | 82 | 66 | 79 | 64<br>(65) | N/A | N/A | 338 | 266 |

## TABLE A.3

## SDRT TEST HISTORY

**Project Year 1977-78**

**Site: OHIO**

| Grade: | 2 | | 3 | | 4 | | 5 | | 6 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| School: | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. |
| 1. Total No. Students took SDRT (spring, fall 1977; spring 1978) | 70 | 70 | 67 | 61 | 61 | 45 | 58 | 50 | 61 | 49 | 317 | 275 |
| 2. No. Designated as Having Learning Problems | 6 | 3 | 3 | 0 | 5 | 0 | 1 | 0 | 1 | 4 | 16 | 7 |
| 3. No. took Spring/Fall 1977 SDRTs only | 20 | 20 | 23 | 17 | 9 | 18 | 13 | 18 | 15 | 15 | 80 | 88 |
| 4. No. took Spring 1978 SDRT only | 7 | 9 | 12 | 11 | 8 | 9 | 9 | 3 | 10 | 6 | 46 | 38 |
| 5. No. in Sample Size for ANCOVA Analyses (1-(2+3+4)) | 37 | 38<br>(41) | 29 | 33 | 39 | 18 | 35 | 29 | 35 | 24 | 175 | 142 |

**Project Year 1978-79**

| Grade: | 2 | | 3 | | 4 | | 5 | | 6 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| School: | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. |
| 1. Total No. Students took SDRT (spring, fall 1978; | 83 | 41 | 62 | 58 | 57 | 45 | 62 | 32 | 54 | 36 | 318 | 212 |
| 2. No. Designated as Having Learning Problems | 0 | 2 | 7 | 0 | 1 | 0 | 8 | 1 | 6 | 0 | 1 | |
| 3. No. took Spring/Fall 1978 SDRTs only | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 4. No. took Spring 1978 SDRT only | " | " | " | " | " | " | " | " | " | " | " | " |
| 5. No. in Sample Size for ANCOVA Analyses (1-(2+3+4)) | " | " | " | " | " | " | " | " | " | " | " | " |

# TABLE A.4

## SDRT TEST HISTORY

### Project Year 1977-78

**Site: TENNESSEE**

| Grade: | 2 | | 3 | | 4 | | 5 | | 6 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| School: | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. |
| 1. Total No. Students took SDRT (spring, fall 1977; spring 1978) | 62 | 41 | 67 | 52 | 52 | 40 | 67 | 33 | 72 | 41 | 320 | 207 |
| 2. No. Designated as Having Learning Problems | 9 | 5 | 7 | 13 | 12 | 11 | 6 | 9 | 8 | 12 | 42 | 50 |
| 3. No. took Spring/Fall 1977 SDRTs only | 10 | 9 | 10 | 11 | 6 | 6 | 9 | 7 | 9 | 5 | 44 | 38 |
| 4. No. took Spring 1978 SDRT only | 10 | 4 | 9 | 5 | 3 | 7 | 7 | 3 | 8 | 4 | 37 | 23 |
| 5. No. in Sample Size for ANCOVA Analyses (1-(2+3+4)) | 33 | 23 | 41 | 23 | 31 | 16 | 45 | 14 | 47 | 20 | 197 | 96 |

### Project Year 1978-79

| Grade: | 2 | | 3 | | 4 | | 5 | | 6 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| School: | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. |
| 1. Total No. Students took SDRT (spring, fall 1978; spring 1979) | 57 | 40 | 67 | 41 | 71 | 45 | 50 | 43 | 63 | 35 | 308 | 204 |
| 2. No. Designated as Having Learning Problems | 4 | 3 | 11 | 7 | 11 | 8 | 12 | 11 | 3 | 11 | 41 | 40 |
| 3. No. took Spring/Fall 1978 SDRTs only | 11 | 17 | 13 | 9 | 6 | 8 | 5 | 3 | 40 | 2 | 75 | 39 |
| 4. No. took Spring 1978 SDRT only | 6 | 3 | 7 | 4 | 12 | 6 | 5 | 8 | 3 | 4 | 33 | 25 |
| 5. No. in Sample Size for ANCOVA Analyses (1-(2+3+4)) | 37 | 17 | 36 | 21 | 42 | 23 | 28 | 21 | 17 | 18 | 159 | 100 |

# TABLE A.5

## SDRT TEST HISTORY

**Project Year 1977-78**

**Site: TEXAS**

| Grade: | 2 | | 3 | | 4 | | 5 | | 6 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| School: | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. |
| 1. Total No. Students took SDRT (spring, fall 1977; spring 1978) | 161 | 167 | 135 | 166 | 120 | 153 | 203* | 272* | N/A | N/A | 619 | 758 |
| 2. No. Designated as Having Learning Problems | 4 | 2 | 7 | 6 | 9 | 10 | 7 | 16 | N/A | N/A | 27 | 34 |
| 3. No. took Spring/Fall 1977 SDRTs only | 43 | 50 | 38 | 38 | 26 | 34 | 115 | 140 | N/A | N/A | 222 | 262 |
| 4. No. took Spring 1978 SDRT only | 27 | 43 | 25 | 30 | 24 | 30 | 16 | 25 | N/A | N/A | 92 | 128 |
| 5. No. in Sample Size for ANCOVA Analyses (1-(2+3+4)) | 87 | 72 | 65 | 92 | 61 | 79 | 65 | 91 | N/A | N/A | 278 | 334 |

*Sixth grade students tested Fall 1977 miscoded as fifth graders.

**Project Year 1978-79**

| Grade: | 2 | | 3 | | 4 | | 5 | | 6 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| School: | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. |
| 1. Total No. Students took SDRT (spring, fall 1978; spring 1979) | 131 | 185 | 154 | 162 | 139 | 164 | 135 | 164 | N/A | N/A | 559 | 675 |
| 2. No. Designated as Having Learning Problems | 12 | 2 | 17 | 7 | 20 | 3 | 18 | 12 | N/A | N/A | 67 | 24 |
| 3. No. took Spring/Fall 1978 SDRTs only | 24 | 41 | 28 | 41 | 41 | 49 | 30 | 48 | N/A | N/A | 123 | 179 |
| 4. No. took Spring 1978 SDRT only | 95† | 136† | 28 | 37 | 23 | 24 | 30 | 26 | N/A | N/A | 176 | 223 |
| 5. No. in Sample Size for ANCOVA Analyses (1-(2+3+4)) | 0 | 6 | 81 | 77 | 55 | 88 | 57 | 78 | N/A | N/A | 193 | 249 |

†Students in first grade Spring 1978 were not given complete SDRT.

## TABLE A.6

## SDRT TEST HISTORY

### Project Year 1977-78

**Site:** WEST VIRGINIA

| Grade: | 2 | | 3 | | 4 | | 5 | | 6 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| School: | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. |
| 1. Total No. Students took SDRT (spring, fall 1977; spring 1978) | 70 | 74 | 68 | 65 | 71 | 65 | 69 | 72 | 71 | 74 | 349 | 350 |
| 2. No. Designated as Having Learning Problems | 5 | 0 | 7 | 6 | 8 | 7 | 0 | 0 | 0 | 0 | 20 | 13 |
| 3. No. took Spring/Fall 1977 SDRTs only | 10 | 7 | 11 | 12 | 17 | 15 | 8 | 18 | 14 | 13 | 60 | 65 |
| 4. No. took Spring 1978 SDRT only | 10 | 15 | 6 | 12 | 8 | 6 | 9 | 15 | 12 | 15 | 45 | 63 |
| 5. No. in Sample Size for ANCOVA Analyses (1-(2+3+4)) | 45 | 52 | 44 | 35 | 38 | 37 | 52 | 39 | 45 | 46 | 224 | 209 |

### Project Year 1978-79

| Grade: | 2 | | 3 | | 4 | | 5 | | 6 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| School: | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. |
| 1. Total No. Students took SDRT (spring, fall 1978; spring 1979) | 83 | 79 | 66 | 69 | 69 | 63 | 73 | 66 | 77 | 68 | 368 | 345 |
| 2. No. Designated as Having Learning Problems | 0 | 0 | 3 | 0 | 4 | 0 | 7 | 0 | 0 | 0 | 14 | 0 |
| 3. No. took Spring/Fall 1978 SDRTs only | 4 | 13 | 4 | 21 | 10 | 15 | 8 | 14 | 9 | 24 | 35 | 87 |
| 4. No. took Spring 1978 SDRT only | 11 | 8 | 7 | 8 | 13 | 8 | 11 | 14 | 13 | 9 | 55 | 47 |
| 5. No. in Sample Size for ANCOVA Analyses (1-(2+3+4)) | 68 | 58 | 52 | 40 | 42 | 40 | 47 | 38 | 55 | 35 | 264 | 211 |

# TABLE A.7

## SDRT TEST HISTORY

**Project Year 1977-78**

Site: CALIFORNIA

| Grade: | 2 | | 3 | | 4 | | 5 | | 6 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| School: | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. |
| 1. Total No. Students took SDRT (fall 1977; spring 1978) | 40 | 59 | 29 | 59 | 34 | 46 | 36 | 58 | 33 | 57 | 172 | 279 |
| 2. No. Designated as Having Learning Problems | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3. No. took Fall 1977 SDRTs only | 1 | 11 | 0 | 13 | 5 | 14 | 4 | 6 | 3 | 6 | 13 | 50 |
| 4. No. took Spring 1978 SDRT only | 3 | 12 | 2 | 7 | 0 | 8 | 5 | 6 | 1 | 9 | 11 | 42 |
| 5. No. in Sample Size for ANCOVA Analyses (1-(2+3+4)) | 36 | 36 | 27 | 39 | 29 | 24 | 27 | 46 | 29 | 42 | 148 | 187 |

**Project Year 1978-79**

| Grade: | 2 | | 3 | | 4 | | 5 | | 6 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| School: | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. |
| 1. Total No. Students took SDRT (spring, fall 1978; spring 1979) | 65 | 60 | 50 | 88 | 54 | 74 | 46 | 67 | 49 | 70 | 264 | 359 |
| 2. No. Designated as Having Learning Problems | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 3. No. took Spring/Fall 1978 SDRTs only | 28 | 24 | 10 | 24 | 16 | 26 | 15 | 23 | 16 | 27 | 85 | 124 |
| 4. No. took Spring 1978 SDRT only | 12 | 18 | 9 | 37 | 16 | 18 | 9 | 27 | 14 | 19 | 60 | 119 |
| 5. No. in Sample Size for ANCOVA Analyses (1-(2+3+4)) | 25 | 18 | 30 | 27 | 22 | 30 | 22 | 17 | 19 | 24 | 118 | 116 |

# APPENDIX B

## SUMMARY OF DIFFERENCES BETWEEN STUDENTS WITH BOTH PRE- AND POSTTEST SCORES AND STUDENTS WITH PRETEST OR POSTTEST ONLY

## TABLE B.1

## SUMMARY OF DIFFERENCES BETWEEN STUDENTS WITH BOTH PRE- AND POSTTEST SCORES AND STUDENTS WITH PRETEST OR POSTTEST ONLY

Site: LOUISIANA Project Year: 1977-1978

| SCHOOL | | GRADE (Spring 1978) | | | | |
|---|---|---|---|---|---|---|
| | | 2 | 3 | 4 | 5 | 6 |
| Special Emphasis | Pretest Only | 0 | + | 0 | 0 | + |
| | Posttest Only | + | 0 | 0 | - | - |
| Comparison | Pretest Only | 0 | - | N/A | 0 | - |
| | Posttest Only | 0 | - | + | 0 | 0 |

Project Year: 1978-1979

| SCHOOL | | GRADE (Spring 1979) | | | | |
|---|---|---|---|---|---|---|
| | | 2 | 3 | 4 | 5 | 6 |
| Special Empahsis | Pretest Only | 0 | 0 | + | + | - |
| | Posttest Only | N/A | + | 0 | + | 0 |
| Comparison | Pretest Only | 0 | - | 0 | 0 | 0 |
| | Posttest Only | 0 | - | 0 | - | 0 |

KEY:

0: Difference between mean scaled score of pre- or posttest only group is less than 1/3 standard deviation from mean of pre- and posttest group.

+: Mean scaled score of pre- or posttest only group is more than 1/3 standard deviation higher than mean of pre- and posttest group.

-: Mean scaled score of pre- or posttest only group is more than 1/3 standard deviation lower than mean of pre- and posttest group.

## TABLE B.2

## SUMMARY OF DIFFERENCES BETWEEN STUDENTS WITH BOTH PRE- AND POSTTEST SCORES AND STUDENTS WITH PRETEST OR POSTTEST ONLY

Site: MICHIGAN Project Year: 1977-1978

| SCHOOL | | GRADE (Spring 1978) | | | | |
|---|---|---|---|---|---|---|
| | | 2 | 3 | 4 | 5 | 6 |
| Special Emphasis | Pretest Only | - | 0 | 0 | 0 | 0 |
| | Posttest Only | 0 | 0 | 0 | 0 | - |
| Comparison | Pretest Only | 0 | - | 0 | - | 0 |
| | Posttest Only | - | 0 | 0 | 0 | 0 |

Project Year: 1978-1979

| SCHOOL | | GRADE (Spring 1979) | | | | |
|---|---|---|---|---|---|---|
| | | 2 | 3 | 4 | 5 | 6 |
| Special Empahsis | Pretest Only | 0 | 0 | - | 0 | N/A |
| | Posttest Only | - | 0 | 0 | 0 | N/A |
| Comparison | Pretest Only | 0 | - | 0 | 0 | N/A |
| | Posttest Only | - | 0 | 0 | - | N/A |

KEY:

0: Difference between mean scaled score of pre- or posttest only group is less than 1/3 standard deviation from mean of pre- and posttest group.

+: Mean scaled score of pre- or posttest only group is more than 1/3 standard deviation higher than mean of pre- and posttest group.

-: Mean scaled score of pre- or posttest only group is more than 1/3 standard deviation lower than mean of pre- and posttest group.

## TABLE B.3

## SUMMARY OF DIFFERENCES BETWEEN STUDENTS WITH BOTH PRE- AND POSTTEST SCORES AND STUDENTS WITH PRETEST OR POSTTEST ONLY

**Site:** OHIO

**Project Year: 1977-1978**

| SCHOOL | | GRADE (Spring 1978) | | | | |
|---|---|---|---|---|---|---|
| | | 2 | 3 | 4 | 5 | 6 |
| **Special Emphasis** | **Pretest Only** | 0 | + | + | 0 | - |
| | **Posttest Only** | 0 | + | 0 | + | - |
| **Comparison** | **Pretest Only** | - | 0 | 0 | - | 0 |
| | **Posttest Only** | - | 0 | 0 | + | - |

**Project Year: 1978-1979**

| SCHOOL | | GRADE (Spring 1979) | | | | |
|---|---|---|---|---|---|---|
| | | 2 | 3 | 4 | 5 | 6 |
| **Special Empahsis** | **Pretest Only** | - | - | - | - | - |
| | **Posttest Only** | - | - | N/A | - | - |
| **Comparison** | **Pretest Only** | - | - | - | - | - |
| | **Posttest Only** | - | - | - | - | - |

**KEY:**

0: Difference between mean scaled score of pre- or posttest only group is less than 1/3 standard deviation from mean of pre- and posttest group.

+: Mean scaled score of pre- or posttest only group is more than 1/3 standard deviation higher than mean of pre- and posttest group.

-: Mean scaled score of pre- or posttest only group is more than 1/3 standard deviation lower than mean of pre- and posttest group.

## TABLE B.4

## SUMMARY OF DIFFERENCES BETWEEN STUDENTS WITH BOTH PRE- AND POSTTEST SCORES AND STUDENTS WITH PRETEST OR POSTTEST ONLY

Site: TENNESSEE

Project Year: 1977-1978

| SCHOOL | | GRADE (Spring 1978) | | | | |
|---|---|---|---|---|---|---|
| | | 2 | 3 | 4 | 5 | 6 |
| Special Emphasis | Pretest Only | 0 | - | + | 0 | - |
| | Posttest Only | + | + | 0 | + | 0 |
| Comparison | Pretest Only | 0 | 0 | - | 0 | 0 |
| | Posttest Only | + | 0 | + | - | + |

Project Year: 1978-1979

| SCHOOL | | GRADE (Spring 1979) | | | | |
|---|---|---|---|---|---|---|
| | | 2 | 3 | 4 | 5 | 6 |
| Special Empahsis | Pretest Only | - | 0 | 0 | + | 0 |
| | Posttest Only | 0 | + | 0 | + | + |
| Comparison | Pretest Only | 0 | + | 0 | - | 0 |
| | Posttest Only | - | + | + | - | 0 |

KEY:

0: Difference between mean scaled score of pre- or posttest only group is less than 1/3 standard deviation from mean of pre- and posttest group.

+: Mean scaled score of pre- or posttest only group is more than 1/3 standard deviation higher than mean of pre- and posttest group.

-: Mean scaled score of pre- or posttest only group is more than 1/3 standard deviation lower than mean of pre- and posttest group.

# TABLE B.5

## SUMMARY OF DIFFERENCES BETWEEN STUDENTS WITH BOTH PRE- AND POSTTEST SCORES AND STUDENTS WITH PRETEST OR POSTTEST ONLY

Site: TEXAS  Project Year: 1977-1978

| SCHOOL | | GRADE (Spring 1978) | | | | |
|---|---|---|---|---|---|---|
| | | 2 | 3 | 4 | 5 | 6 |
| Special Emphasis | Pretest Only | 0 | 0 | - | 0 | - |
| | Posttest Only | 0 | 0 | - | - | - |
| Comparison | Pretest Only | 0 | 0 | 0 | 0 | - |
| | Posttest Only | 0 | 0 | 0 | 0 | - |

Project Year: 1978-1979

| SCHOOL | | GRADE (Spring 1979) | | | | |
|---|---|---|---|---|---|---|
| | | 2 | 3 | 4 | 5 | 6 |
| Special Emphasis | Pretest Only | N/A | 0 | 0 | 0 | - |
| | Posttest Only | N/A | - | 0 | - | - |
| Comparison | Pretest Only | N/A | 0 | 0 | 0 | - |
| | Posttest Only | + | 0 | - | 0 | - |

KEY:

0: Difference between mean scaled score of pre- or posttest only group is less than 1/3 standard deviation from mean of pre- and posttest group.

+: Mean scaled score of pre- or posttest only group is more than 1/3 standard deviation higher than mean of pre- and posttest group.

-: Mean scaled score of pre- or posttest only group is more than 1/3 standard deviation lower than mean of pre- and posttest group.

## TABLE B.6

## SUMMARY OF DIFFERENCES BETWEEN STUDENTS WITH BOTH PRE- AND POSTTEST SCORES AND STUDENTS WITH PRETEST OR POSTTEST ONLY

Site: WEST VIRGINIA Project Year: 1977-1978

| SCHOOL | | GRADE (Spring 1978) | | | | |
|---|---|---|---|---|---|---|
| | | 2 | 3 | 4 | 5 | 6 |
| Special Emphasis | Pretest Only | 0 | - | - | - | - |
| | Posttest Only | - | - | - | - | 0 |
| Comparison | Pretest Only | 0 | - | - | - | 0 |
| | Posttest Only | - | 0 | 0 | - | - |

Project Year: 1978-1979

| SCHOOL | | GRADE (Spring 1979) | | | | |
|---|---|---|---|---|---|---|
| | | 2 | 3 | 4 | 5 | 6 |
| Special Empahsis | Pretest Only | 0 | - | - | 0 | - |
| | Posttest Only | - | - | - | 0 | - |
| Comparison | Pretest Only | - | 0 | - | 0 | - |
| | Posttest Only | 0 | + | 0 | 0 | 0 |

KEY:

0: Difference between mean scaled score of pre- or posttest only group is less than 1/3 standard deviation from mean of pre- and posttest group.

+: Mean scaled score of pre- or posttest only group is more than 1/3 standard deviation higher than mean of pre- and posttest group.

-: Mean scaled score of pre- or posttest only group is more than 1/3 standard deviation lower than mean of pre- and posttest group.

## TABLE B.7

## SUMMARY OF DIFFERENCES BETWEEN STUDENTS WITH BOTH PRE- AND POSTTEST SCORES AND STUDENTS WITH PRETEST OR POSTTEST ONLY

Site: CALIFORNIA Project Year: 1977-1978

| SCHOOL | | GRADE (Spring 1978) | | | | |
|---|---|---|---|---|---|---|
| | | 2 | 3 | 4 | 5 | 6 |
| Special Emphasis | Pretest Only | | | | | |
| | Posttest Only | | | | | |
| Comparison | Pretest Only | | | | | |
| | Posttest Only | | | | | |

Project Year: 1978-1979

| SCHOOL | | GRADE (Spring 1979) | | | | |
|---|---|---|---|---|---|---|
| | | 2 | 3 | 4 | 5 | 6 |
| Special Empahsis | Pretest Only | 0 | - | 0 | 0 | 0 |
| | Posttest Only | - | 0 | - | - | - |
| Comparison | Pretest Only | + | + | + | 0 | 0 |
| | Posttest Only | 0 | - | 0 | 0 | - |

KEY:

0: Difference between mean scaled score of pre- or posttest only group is less than 1/3 standard deviation from mean of pre- and posttest group.

+: Mean scaled score of pre- or posttest only group is more than 1/3 standard deviation higher than mean of pre- and posttest group.

-: Mean scaled score of pre- or posttest only group is more than 1/3 standard deviation lower than mean of pre- and posttest group.

# APPENDIX C

# MEAN RAW SCORES ON THE SDRT REPORTED BY CLASS

## TABLE C.1

## MEAN RAW SCORES ON THE SDRT REPORTED BY CLASS

**Site:** LOUISIANA  **School:** SPECIAL EMPHASIS

| GRADE | SDRT TEST POINTS | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPRING 1977 | | | FALL 1977 | | | SPRING 1978 | | | FALL 1978 | | | SPRING 1979 | | | FALL 1979 | | |
| | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind |
| 1 | 22 | 29.7 | | | | | 20 | 47.4 | | | | | 22 | 31.9 | | | | |
| | 25 | 34.6 | | | | | 20 | 25.5 | F | | | | 22 | 33.5 | | | | |
| 2 | 16 | 76.6 | C | 17 | 39.8 | | 17 | 71.7 | C | 20 | 51.0 | | 18 | 73.6 | C | 11 | 48.6 | |
| | 14 | 67.6 | C | 20 | 37.7 | | 19 | 75.4 | C | 16 | 43.7 | | 18 | 76.9 | C | 9 | 52.8 | |
| | 12 | 58.1 | | | | | | | | | | | | | | | | |
| 3 | 19 | 47.9 | C | 24 | 28.0 | | 24 | 40.8 | | 13 | 33.7 | | 21 | 40.7 | | 6 | 39.7 | |
| | 16 | 35.8 | | 23 | 26.9 | | 21 | 37.6 | | 21 | 21.8 | | 22 | 40.2 | | 5 | 26.0 | |
| 4 | 18 | 32.0 | | 28 | 42.1 | C | 25 | 47.8 | C | 18 | 36.0 | | 18 | 48.7 | C | 10 | 46.2 | C |
| | 17 | 46.0 | C | 17 | 24.9 | | 18 | 37.4 | | 26 | 47.3 | C | 23 | 50.6 | C | 12 | 37.7 | |
| | 18 | 54.7 | C | | | | | | | | | | | | | | | |
| 5 | 19 | 21.9 | | 26 | 25.4 | | 21 | 36.4 | | 22 | 16.9 | F | 20 | 22.9 | | 7 | 19.8 | |
| | 16 | 38.2 | | 21 | 23.4 | | 18 | 33.1 | | 24 | 28.7 | | 20 | 37.4 | | 3 | 20.3 | |
| | | | | | | | | | | | | | | | | 2 | 24.0 | |
| | | | | | | | | | | | | | | | | 11 | 28.4 | |
| 6 | 26 | 42.0 | C | 26 | 23.1 | | 24 | 31.5 | | 27 | 38.6 | | 31 | 45.1 | C | 7 | 30.3 | |
| | 27 | 31.4 | | 23 | 30.7 | | 23 | 35.4 | | 24 | 27.4 | | 24 | 30.9 | | 8 | 37.1 | |
| | | | | | | | | | | | | | | | | 3 | 21.0 | |
| 7 | | | | | | | | | | 11 | 27.7 | | | | | 25 | 40.1 | |
| | | | | | | | | | | 28 | 42.1 | C | | | | 12 | 38.2 | |

| Test Level | Maximum Score | Floor (F) Effect Below | Ceiling (C) Effect Above |
|---|---|---|---|
| Red | 90 | 27 | 63 |
| Green | 60 | 18 | 42 |
| Brown | 60 | 18 | 42 |

# TABLE C.2

## MEAN RAW SCORES ON THE SDRT REPORTED BY CLASS

Site: LOUISIANA School: COMPARISON

| | SDRT TEST POINTS | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPRING 1977 | | | FALL 1977 | | | SPRING 1978 | | | FALL 1978 | | | SPRING 1979 | | | FALL 1979 | | |
| GRADE | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind |
| 1 | 22 | 41.4 | | | | | 19 | 42.8 | | | | | 26 | 47.0 | | | | |
| | 24 | 41.6 | | | | | 29 | 56.0 | | | | | 24 | 37.0 | | | | |
| | 22 | 42.3 | | | | | 22 | 54.6 | | | | | 27 | 36.7 | | | | |
| | 24 | 47.4 | | | | | 24 | 45.9 | | | | | 28 | 52.9 | | | | |
| | 17 | 55.5 | | | | | 22 | 34.0 | | | | | | | | | | |
| | 25 | 45.9 | | | | | | | | | | | | | | | | |
| 2 | 22 | 73.1 | C | 16 | 47.6 | | 19 | 79.6 | C | 25 | 73.2 | C | 24 | 87.4 | C | 16 | 58.4 | |
| | 24 | 72.6 | C | 24 | 71.6 | C | 24 | 85.9 | C | 22 | 58.7 | | 23 | 75.7 | C | 3 | 31.7 | |
| | 22 | 69.7 | C | 24 | 43.7 | | 21 | 68.8 | C | 23 | 48.1 | | 22 | 77.9 | C | 17 | 42.2 | |
| | 21 | 72.8 | C | 25 | 37.5 | | 24 | 64.6 | C | 24 | 68.5 | C | 21 | 65.8 | C | 18 | 45.8 | |
| | 22 | 76.1 | C | 26 | 56.6 | | 21 | 79.8 | C | 23 | 52.3 | | 23 | 82.6 | C | 20 | 67.7 | C |
| 3 | 30 | 38.7 | | 28 | 28.5 | | 19 | 45.2 | C | 29 | 22.9 | | 13 | 45.4 | C | 22 | 34.7 | |
| | 24 | 40.8 | | 29 | 38.2 | | 23 | 39.5 | | 33 | 44.1 | C | 16 | 43.5 | C | 4 | 20.5 | |
| | 32 | 42.3 | C | 32 | 33.2 | | 20 | 47.3 | C | 34 | 33.0 | | 27 | 51.3 | C | 7 | 29.8 | |
| | | | | | | | 26 | 42.8 | C | | | | 22 | 47.0 | C | 13 | 30.8 | |
| | | | | | | | | | | | | | | | | 10 | 34.3 | |
| | | | | | | | | | | | | | | | | 8 | 28.7 | |
| | | | | | | | | | | | | | | | | 4 | 18.2 | |
| 4 | 28 | 44.0 | C | 29 | 36.3 | | 20 | 42.6 | C | 16 | 21.7 | | 24 | 49.9 | C | 14 | 45.7 | C |
| | 25 | 44.9 | C | 28 | 32.0 | | 26 | 51.1 | C | 27 | 44.3 | C | 20 | 51.0 | C | 24 | 51.6 | C |
| | 30 | 43.0 | C | 30 | 37.5 | | 27 | 45.9 | C | 29 | 54.6 | C | 26 | 44.3 | C | 19 | 44.9 | C |
| | 25 | 48.8 | C | 28 | 30.6 | | 21 | 39.0 | | 22 | 37.9 | | 21 | 51.0 | C | 8 | 40.9 | |
| | 28 | 46.1 | C | | | | | | | | | | | | | | | |
| 5 | 23 | 28.8 | | 1 | 20.0 | | 18 | 18.5 | | 23 | 17.1 | F | 19 | 20.8 | | 15 | 28.9 | |
| | 24 | 32.1 | | 25 | 22.3 | | 28 | 29.9 | | 25 | 32.8 | | 27 | 34.9 | | 3 | 16.3 | F |
| | 23 | 24.3 | | 48 | 23.3 | | 18 | 43.5 | C | 2 | 31.0 | | 27 | 27.3 | | 14 | 28.9 | |
| | 22 | 31.5 | | 25 | 19.4 | | 26 | 24.2 | | 19 | 18.4 | | 6 | 21.3 | | 14 | 24.5 | |
| | | | | 23 | 19.7 | | | | | 28 | 16.7 | F | | | | 15 | 23.8 | |
| 6 | 21 | 29.9 | | 27 | 18.4 | | 8 | 24.4 | | 12 | 19.6 | | 29 | 39.0 | | 21 | 26.5 | |
| | 30 | 30.4 | | 33 | 39.8 | | 28 | 49.8 | C | 18 | 22.5 | | 20 | 30,8 | | 17 | 22.3 | |
| | 25 | 41.9 | | 29 | 24.2 | | 26 | 34.3 | | 30 | 40.0 | | 19 | 31.9 | | 21 | 36.2 | |
| | 28 | 30.9 | | 23 | 18.7 | | 22 | 21.1 | | 27 | 29.5 | | 20 | 37.0 | | 10 | 22.9 | |
| | 26 | 42.6 | C | | | | | | | 25 | 25.9 | | 17 | 28.2 | | | | |
| 7 | | | | 14 | 35.1 | | | | | 34 | 39.2 | | | | | 25 | 34.1 | |
| | | | | 33 | 35.1 | | | | | 53 | 27.0 | | | | | 20 | 25.7 | |
| | | | | 16 | 25.2 | | | | | | | | | | | 20 | 29.3 | |
| | | | | 53 | 34.3 | | | | | | | | | | | 19 | 34.4 | |
| | | | | | | | | | | | | | | | | 13 | 30.0 | |

| Test Level | Maximum Score | Floor (F) Effect Below | Ceiling (C) Effect Above |
|---|---|---|---|
| Red | 90 | 27 | 63 |
| Green | 60 | 18 | 42 |
| Brown | 60 | 18 | 42 |

## TABLE C.3

## MEAN RAW SCORES ON THE SDRT REPORTED BY CLASS

Site: MICHIGAN School: SPECIAL EMPHASIS

| | SDRT TEST POINTS | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPRING 1977 | | | FALL 1977 | | | SPRING 1978 | | | FALL 1978 | | | SPRING 1979 | | | FALL 1979 | | |
| GRADE | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind |
| 1 | 27 | 55.2 | | | | | 24 | 46.4 | | | | | 30 | 63.0 | C | | | |
| | 31 | 45.7 | | | | | 19 | 54.7 | | | | | 24 | 50.5 | | | | |
| | 27 | 47.8 | | | | | 19 | 46.9 | | | | | 19 | 42.1 | | | | |
| | 26 | 47.9 | | | | | 25 | 46.6 | | | | | 21 | 43.3 | | | | |
| | | | | | | | 21 | 43.8 | | | | | | | | | | |
| 2 | 26 | 66.8 | C | 23 | 51.3 | | 25 | 77.3 | C | 28 | 45.6 | | 30 | 74.3 | C | 12 | 70.7 | C |
| | 32 | 72.6 | C | 24 | 55.9 | | 29 | 77.0 | C | 25 | 59.6 | | 23 | 80.8 | C | 12 | 66.3 | C |
| | 30 | 75.4 | C | 23 | 37.3 | | 30 | 70.6 | C | 29 | 47.3 | | 26 | 81.9 | C | 14 | 52.6 | |
| | 29 | 66.5 | C | 27 | 52.0 | | 31 | 75.9 | C | 23 | 55.6 | | 27 | 80.0 | C | 13 | 34.7 | |
| 3 | 30 | 42.7 | C | 29 | 30.3 | | 25 | 44.0 | C | 27 | 33.4 | | 30 | 44.4 | C | 26 | 29.2 | |
| | 27 | 40.3 | | 27 | 25.2 | | 27 | 35.0 | | 31 | 32.8 | | 32 | 43.3 | C | 17 | 29.3 | |
| | 35 | 35.1 | | 25 | 31.0 | | 25 | 43.4 | C | 28 | 33.7 | | 31 | 41.7 | C | 24 | 37.2 | |
| | | | | 25 | 27.2 | | 24 | 38.2 | | 30 | 26.8 | | 29 | 35.2 | | 7 | 34.3 | |
| | | | | | | | | | | | | | | | | 6 | 28.0 | |
| | | | | | | | | | | | | | | | | 21 | 28.1 | |
| 4 | 22 | 38.3 | | 21 | 34.0 | | 20 | 44.0 | C | 30 | 38.3 | | 30 | 44.9 | C | 21 | 37.9 | |
| | 18 | 46.9 | C | 27 | 39.5 | | 24 | 44.5 | C | 31 | 30.6 | | 29 | 39.2 | | 22 | 39.7 | |
| | 25 | 45.8 | C | 25 | 35.9 | | 25 | 45.6 | C | 9 | 56.0 | C | 16 | 55.8 | C | 16 | 43.4 | C |
| | 24 | 49.5 | C | 25 | 39.5 | | 24 | 49.1 | C | 27 | 38.7 | | 30 | 47.5 | | 18 | 46.3 | C |
| 5 | 25 | 28.0 | | 21 | 23.2 | | 23 | 31.9 | | 28 | 18.3 | | 32 | 18.7 | | 24 | 21.6 | |
| | 29 | 24.0 | | 20 | 16.8 | F | 23 | 21.2 | | 25 | 18.8 | | 28 | 25.6 | | 27 | 20.7 | |
| | 26 | 24.8 | | 21 | 15.3 | F | 22 | 16.7 | F | 15 | 24.2 | | 15 | 37.3 | | 25 | 16.6 | F |
| | 25 | 29.8 | | 19 | 24.3 | | 21 | 30.9 | | 30 | 18.8 | | 30 | 22.4 | | 15 | 38.5 | |
| 6 | 29 | 33.0 | | 24 | 25.1 | | 23 | 29.7 | | | | | | | | 11 | 30.5 | |
| | 26 | 28.8 | | 25 | 25.1 | | 26 | 31.5 | | | | | | | | 18 | 19.8 | |
| | 29 | 32.2 | | 28 | 28.6 | | 24 | 36.3 | | | | | | | | 19 | 21.9 | |
| | 26 | 36.4 | | [illegible] | 19.4 | | 24 | 30.6 | | | | | | | | 20 | 20.6 | |

| Test Level | Maximum Score | Floor (F) Effect Below | Ceiling (C) Effect Above |
|---|---|---|---|
| Red | 90 | 27 | 63 |
| Green | 60 | 18 | 42 |
| Brown | 60 | 18 | 42 |

# TABLE C.4

## MEAN RAW SCORES ON THE SDRT REPORTED BY CLASS

**Site:** MICHIGAN **School:** COMPARISON

| GRADE | SDRT TEST POINTS | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPRING 1977 | | | FALL 1977 | | | SPRING 1978 | | | FALL 1978 | | | SPRING 1979 | | | FALL 1979 | | |
| | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind |
| 1 | 21 | 41.3 | | | | | 28 | 50.4 | | | | | 33 | 68.5 | C | | | |
| | 26 | 45.1 | | | | | 31 | 41.9 | | | | | 28 | 44.2 | | | | |
| | 24 | 49.7 | | | | | 30 | 42.6 | | | | | 33 | 60.3 | | | | |
| | 24 | 45.7 | | | | | | | | | | | | | | | | |
| 2 | 27 | 58.5 | | 22 | 54.8 | | 26 | 74.1 | C | 32 | 56.3 | | 32 | 77.9 | C | 23 | 52.9 | |
| | 23 | 71.4 | C | 16 | 39.7 | | 24 | 56.3 | | 31 | 46.6 | | 25 | 70.3 | C | 17 | 47.5 | |
| | 28 | 72.1 | C | 21 | 44.7 | | 23 | 60.2 | | 33 | 54.4 | | 33 | 76.2 | C | 26 | 41.3 | |
| | | | | 26 | 45.3 | | 26 | 74.9 | C | | | | | | | | | |
| 3 | 22 | 42.4 | C | 25 | 25.9 | | 21 | 44.3 | C | 34 | 29.7 | | 34 | 43.4 | C | 31 | 33.3 | |
| | 21 | 35.4 | | 24 | 31.0 | | 21 | 36.5 | | 24 | 23.2 | | 32 | 34.4 | | 22 | 26.5 | |
| | 21 | 39.2 | | 19 | 26.8 | | 20 | 38.9 | | 31 | 35.1 | | 30 | 48.3 | C | 27 | 31.5 | |
| | 23 | 43.9 | C | 24 | 27.9 | | 22 | 38.7 | | | | | | | | 14 | 28.1 | |
| 4 | 21 | 44.4 | C | 23 | 46.4 | C | 28 | 48.8 | C | 30 | 45.3 | C | 27 | 47.4 | C | 14 | 41.1 | |
| | 22 | 42.0 | C | 25 | 40.0 | | 24 | 47.1 | C | 32 | 41.3 | | 32 | 46.3 | C | 10 | 38.5 | |
| | 24 | 46.4 | C | 26 | 37.0 | | 25 | 47.8 | C | 25 | 41.5 | | 25 | 44.6 | | 22 | 46.3 | C |
| | 22 | 43.5 | C | | | | | | | | | | | | | 11 | 48.0 | |
| 5 | 22 | 24.8 | | 19 | 21.9 | | 21 | 23.8 | | 25 | 26.1 | | 25 | 27.3 | | 22 | 24.1 | |
| | 24 | 25.3 | | 25 | 22.8 | | 24 | 26.8 | | 25 | 24.0 | | 29 | 29.1 | | 25 | 17.1 | F |
| | 24 | 18.0 | F | 25 | 19.7 | | 25 | 21.1 | | 26 | 24.4 | | 30 | 29.6 | | 22 | 18.3 | |
| | 20 | 19.7 | | 24 | 16.7 | F | 23 | 21.5 | | | | | | | | 9 | 21.0 | |
| 6 | 28 | 24.6 | | 21 | 25.7 | | 17 | 33.6 | | | | | | | | 18 | 26.8 | |
| | 32 | 33.8 | | 19 | 21.7 | | 20 | 26.1 | | | | | | | | 23 | 25.0 | |
| | 29 | 32.5 | | 21 | 27.6 | | 19 | 33.2 | | | | | | | | 22 | 27.7 | |
| | | | | 18 | 20.8 | | 18 | 24.8 | | | | | | | | | | |

| Test Level | Maximum Score | Floor (F) Effect Below | Ceiling (C) Effect Above |
|---|---|---|---|
| Red | 90 | 27 | 63 |
| Green | 60 | 18 | 42 |
| Brown | 60 | 18 | 42 |

## TABLE C.5

## MEAN RAW SCORES ON THE SDRT REPORTED BY CLASS

Site: OHIO School: SPECIAL EMPHASIS

| GRADE | SDRT TEST POINTS | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPRING 1977 | | | FALL 1977 | | | SPRING 1978 | | | FALL 1978 | | | SPRING 1979 | | | FALL 1979 | | |
| | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind |
| 1 | 19 | 53.1 | | | | | 24 | 54.6 | | | | | | | | | | |
| | 32 | 62.5 | | | | | 5 | 77.6 | C | | | | | | | | | |
| | | | | | | | 29 | 46.9 | | | | | | | | | | |
| 2 | 26 | 72.4 | C | 27 | 62.8 | | 23 | 84.6 | C | 27 | 61.0 | C | | | | | | |
| | 19 | 79.5 | C | 23 | 52.9 | | 21 | 70.1 | C | 28 | 53.1 | | | | | | | |
| 3 | 29 | 46.4 | C | 12 | 24.2 | | 12 | 45.9 | C | 27 | 34.2 | | | | | | | |
| | 15 | 36.1 | | 33 | 33.2 | | 29 | 43.9 | C | 7 | 34.8 | | | | | | | |
| | | | | | | | | | | 11 | 29.8 | | | | | | | |
| 4 | 31 | 47.8 | C | 19 | 44.5 | C | 17 | 49.5 | C | 16 | 39.7 | | | | | | | |
| | 16 | 48.6 | C | 29 | 34.3 | | 30 | 41.2 | | 25 | 42.3 | C | | | | | | |
| 5 | 17 | 44.2 | C | 29 | 20.5 | | 28 | 31.5 | | 22 | 27.1 | | | | | | | |
| | 30 | 29.7 | | 16 | 17.9 | F | 16 | 20.3 | | 20 | 27.0 | | | | | | | |
| 6 | 19 | 33.8 | | 28 | 32.3 | | 29 | 42.4 | C | 7 | 29.7 | | | | | | | |
| | 31 | 45.6 | C | 17 | 31.5 | | 16 | 40.9 | | 22 | 30.6 | | | | | | | |
| 7 | | | | 13 | 33.2 | | | | | | | | | | | | | |
| | | | | 24 | 40.7 | | | | | | | | | | | | | |

| Test Level | Maximum Score | Floor (F) Effect Below | Ceiling (C) Effect Above |
|---|---|---|---|
| Red | 90 | 27 | 63 |
| Green | 60 | 18 | 42 |
| Brown | 60 | 18 | 42 |

# TABLE C.6

## MEAN RAW SCORES ON THE SDRT REPORTED BY CLASS

**Site:** OHIO **School:** COMPARISON

| GRADE | SDRT TEST POINTS | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPRING 1977 | | | FALL 1977 | | | SPRING 1978 | | | FALL 1978 | | | SPRING 1979 | | | FALL 1979 | | |
| | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind |
| 1 | 22 | 45.7 | | | | | 29 | 43.3 | | | | | | | | | | |
| | 26 | 46.7 | | | | | | | | | | | | | | | | |
| | 9 | 43.2 | | | | | | | | | | | | | | | | |
| 2 | 20 | 78.8 | C | 16 | 35.5 | | 24 | 65.4 | C | 6 | 49.5 | | | | | | | |
| | 29 | 71.8 | C | 29 | 52.6 | | 26 | 78.4 | C | 11 | 46.9 | | | | | | | |
| | | | | 9 | 41.2 | | | | | 4 | 37.0 | | | | | | | |
| 3 | 35 | 44.5 | C | 26 | 30.1 | | 29 | 43.3 | C | 11 | 25.3 | | | | | | | |
| | | | | 16 | 32.4 | | 15 | 49.0 | C | 17 | 23.2 | | | | | | | |
| | | | | | | | | | | 5 | 37.2 | | | | | | | |
| 4 | 33 | 41.4 | | 27 | 44.2 | C | 17 | 51.8 | C | 8 | 46.4 | C | | | | | | |
| | 10 | 53.7 | C | | | | 10 | 46.3 | C | 8 | 37.1 | | | | | | | |
| | | | | | | | | | | 6 | 49.7 | C | | | | | | |
| | | | | | | | | | | 5 | 45.0 | C | | | | | | |
| 5 | 19 | 23.6 | | 35 | 21.6 | | 21 | 36.8 | | 10 | 22.1 | | | | | | | |
| | 18 | 28.0 | | | | | 11 | 17.2 | F | 3 | 25.0 | | | | | | | |
| | | | | | | | | | | 7 | 22.8 | | | | | | | |
| 6 | 9 | 48.0 | C | 35 | 23.5 | | 7 | 36.0 | | 8 | 24.5 | | | | | | | |
| | 34 | 36.1 | | | | | 23 | 29.9 | | 14 | 26.7 | | | | | | | |
| | | | | | | | | | | 6 | 33.5 | | | | | | | |

| Test Level | Maximum Score | Floor (F) Effect Below | Ceiling (C) Effect Above |
|---|---|---|---|
| Red | 90 | 27 | 63 |
| Green | 60 | 18 | 42 |
| Brown | 60 | 18 | 42 |

## TABLE C.7

## MEAN RAW SCORES ON THE SDRT REPORTED BY CLASS

**Site:** TENNESSEE　　**School:** SPECIAL EMPHASIS

| | SDRT TEST POINTS | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPRING 1977 | | | FALL 1977 | | | SPRING 1978 | | | FALL 1978 | | | SPRING 1979 | | | FALL 1979 | | |
| GRADE | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind |
| 1 | 21 | 36.2 | | | | | 11 | 60.7 | | | | | 16 | 66.6 | C | | | |
| | 23 | 38.8 | | | | | 13 | 43.5 | | | | | 22 | 56.2 | | | | |
| | | | | | | | 21 | 61.1 | | | | | | | | | | |
| 2 | 24 | 64.2 | C | 22 | 44.7 | | 23 | 77.1 | C | 23 | 64.2 | C | 22 | 84.3 | C | 33 | 67.4 | C |
| | 25 | 68.4 | C | 13 | 46.5 | | 13 | 83.1 | C | 21 | 62.0 | | 20 | 85.3 | C | 15 | 65.2 | C |
| | | | | 7 | 33.3 | | 7 | 51.0 | | | | | | | | 18 | 69.3 | C |
| 3 | 19 | 40.1 | | 6 | 15.1 | F | 3 | 42.3 | C | 23 | 31.0 | | 23 | 40.1 | | 22 | 42.4 | C |
| | 16 | 32.2 | | 23 | 29.4 | | 19 | 46.7 | C | 19 | 32.0 | | 20 | 43.4 | C | 18 | 38.3 | |
| | | | | 23 | 32.8 | | 22 | 48.4 | C | | | | | | | | | |
| 4 | 22 | 46.8 | C | 21 | 33.9 | | 21 | 47.8 | C | 26 | 47.6 | C | 29 | 52.0 | C | 23 | 41.7 | |
| | 20 | 42.6 | C | 13 | 34.8 | | 13 | 46.3 | C | 23 | 42.6 | C | 25 | 52.3 | C | 19 | 43.4 | C |
| | 11 | 52.0 | C | | | | | | | | | | | | | | | |
| 5 | 23 | 28.6 | | 11 | 16.8 | F | 9 | 26.5 | | 9 | 25.0 | | 12 | 34.7 | | 23 | 25.2 | |
| | 9 | 20.0 | | 27 | 21.4 | | 27 | 26.4 | | 22 | 24.2 | | 21 | 25.5 | | 22 | 28.3 | |
| | 24 | 32.0 | | 16 | 18.1 | | 15 | 37.4 | | | | | | | | | | |
| 6 | 26 | 36.4 | | 28 | 25.0 | | 26 | 36.3 | | 20 | 34.3 | | 20 | 39.3 | | 12 | 33.5 | |
| | 24 | 31.6 | | 22 | 25.3 | | 23 | 32.8 | | 31 | 26.9 | | | | | 20 | 26.2 | |
| | 27 | 32.8 | | 6 | 12.0 | F | 6 | 25.8 | | | | | | | | | | |
| 7 | | | | 23 | 34.1 | | | | | 43 | 33.3 | | | | | 17 | 39.7 | |
| | | | | 18 | 38.7 | | | | | | | | | | | 30 | 36.4 | |
| | | | | 22 | 33.1 | | | | | | | | | | | | | |

| Test Level | Maximum Score | Floor (F) Effect Below | Ceiling (C) Effect Above |
|---|---|---|---|
| Red | 90 | 27 | 63 |
| Green | 60 | 18 | 42 |
| Brown | 60 | 18 | 42 |

# TABLE C.8

# MEAN RAW SCORES ON THE SDRT REPORTED BY CLASS

Site: TENNESSEE School: COMPARISON

| GRADE | SDRT TEST POINTS | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPRING 1977 | | | FALL 1977 | | | SPRING 1978 | | | FALL 1978 | | | SPRING 1979 | | | FALL 1979 | | |
| | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind |
| 1 | 17 | 45.0 | | | | | 15 | 23.1 | | | | | 19 | 42.8 | | | | |
| | 15 | 38.7 | | | | | 23 | 52.8 | | | | | 17 | 41.4 | | | | |
| 2 | 10 | 82.8 | C | 6 | 39.5 | | 4 | 77.5 | C | 20 | 61.6 | | 20 | 86.0 | C | 28 | 49.6 | |
| | 11 | 67.8 | C | 24 | 54.4 | | 23 | 77.6 | C | | | | | | | 13 | 47.6 | |
| | 10 | 84.6 | C | | | | | | | | | | | | | 14 | 50.1 | |
| 3 | 5 | 24.0 | | 15 | 37.6 | | 14 | 48.3 | C | 19 | 31.5 | | 17 | 46.5 | C | 18 | 40.9 | |
| | 5 | 51.6 | C | 17 | 27.2 | | 14 | 47.3 | C | 7 | 31.0 | | 8 | 47.2 | C | | | |
| | 8 | 40.2 | | | | | | | | | | | | | | | | |
| 4 | 18 | 52.2 | C | 16 | 37.4 | | 16 | 53.4 | C | 11 | 48.2 | C | 9 | 57.1 | C | 13 | 45.3 | C |
| | 4 | 38.2 | | 6 | 41.3 | | 7 | 50.3 | C | 4 | 54.2 | C | 5 | 53.2 | C | 4 | 47.5 | C |
| | | | | | | | | | | 15 | 40.1 | | 15 | 50.3 | C | | | |
| 5 | 6 | 29.3 | | 8 | 25.2 | | 8 | 34.7 | | 13 | 23.9 | | 15 | 37.5 | | 7 | 35.4 | |
| | 10 | 18.2 | | 10 | 25.1 | | 9 | 30.8 | | 16 | 31.2 | | 14 | 30.9 | | 5 | 27.2 | |
| | 6 | 30.8 | | | | | | | | | | | | | | 14 | 26.9 | |
| 6 | 12 | 27.5 | | 10 | 26.9 | | 10 | 25.7 | | 17 | 34.6 | | 19 | 40.4 | | 13 | 36.1 | |
| | 9 | 33.9 | | 14 | 28.4 | | 14 | 40.1 | | | | | | | | 11 | 37.2 | |
| | 12 | 36.4 | | | | | | | | | | | | | | | | |
| 7 | | | | 21 | 35.4 | | | | | 23 | 34.7 | | | | | 14 | 37.7 | |
| | | | | 6 | 31.7 | | | | | | | | | | | | | |

| Test Level | Maximum Score | Floor (F) Effect Below | Ceiling (C) Effect Above |
|---|---|---|---|
| Red | 90 | 27 | 63 |
| Green | 60 | 18 | 42 |
| Brown | 60 | 18 | 42 |

# TABLE C.9

## MEAN RAW SCORES ON THE SDRT REPORTED BY CLASS

Site: TEXAS School: SPECIAL EMPHASIS

| GRADE | SDRT TEST POINTS | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPRING 1977 | | | FALL 1977 | | | SPRING 1978 | | | FALL 1978 | | | SPRING 1979 | | | FALL 1979 | | |
| | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind |
| 1 | 25 | 49.3 | | | | | | | | | | | 26 | 62.6 | | | | |
| | 22 | 52.2 | | | | | | | | | | | 24 | 59.4 | | | | |
| | 25 | 48.3 | | | | | | | | | | | 21 | 73.1 | C | | | |
| | 23 | 54.1 | | | | | | | | | | | 19 | 65.3 | C | | | |
| | 20 | 56.7 | | | | | | | | | | | | | | | | |
| 2 | 23 | 78.6 | C | 21 | 51.1 | | 21 | 77.9 | C | 21 | 63.7 | C | 18 | 82.2 | C | 18 | 68.2 | C |
| | 24 | 80.9 | C | 22 | 58.1 | | 23 | 83.1 | C | 21 | 59.8 | | 19 | 84.5 | C | 18 | 70.7 | C |
| | 24 | 79.7 | C | 23 | 54.3 | | 22 | 78.0 | C | 20 | 63.1 | C | 20 | 81.9 | C | 18 | 71.7 | C |
| | 24 | 75.5 | C | 23 | 54.0 | | 23 | 77.2 | C | 17 | 55.0 | | 18 | 84.4 | C | 16 | 69.9 | C |
| | | | | 24 | 65.0 | C | 23 | 82.2 | C | 19 | 56.2 | | 19 | 78.9 | C | | | |
| 3 | 26 | 44.2 | C | 24 | 45.7 | C | 24 | 51.6 | C | 25 | 37.3 | | 25 | 49.5 | C | 18 | 35.5 | |
| | 28 | 49.3 | C | 24 | 33.3 | | 25 | 39.5 | | 29 | 37.5 | | 31 | 47.3 | C | 18 | 43.7 | C |
| | 27 | 47.1 | C | 23 | 32.1 | | 23 | 41.6 | | 27 | 38.7 | | 25 | 46.7 | C | 19 | 38.4 | |
| | | | | 22 | 38.6 | | 18 | 47.0 | C | 25 | 34.2 | | 28 | 41.6 | | 14 | 39.8 | |
| | | | | | | | | | | | | | | | | 18 | 36.2 | |
| 4 | 28 | 54.3 | C | 22 | 48.1 | C | 21 | 50.6 | C | 21 | 49.2 | C | 20 | 50.6 | C | 23 | 48.8 | C |
| | 25 | 51.8 | C | 22 | 51.4 | C | 22 | 53.9 | C | 16 | 46.6 | C | 17 | 51.2 | C | 27 | 45.5 | C |
| | 24 | 48.8 | C | 23 | 46.8 | C | 23 | 48.3 | C | 26 | 52.9 | C | 27 | 52.8 | C | 25 | 45.0 | C |
| | | | | 22 | 44.2 | C | 19 | 51.2 | C | 17 | 42.2 | C | 14 | 51.6 | C | 23 | 43.6 | C |
| 5 | 29 | 31.9 | | 52 | 28.6 | | 29 | 36.8 | | 13 | 25.4 | | 14 | 27.7 | | 16 | 30.4 | |
| | 26 | 34.7 | | 52 | 30.3 | | 26 | 36.3 | | 22 | 24.2 | | 27 | 36.2 | | 15 | 28.7 | |
| | 26 | 37.9 | | 46 | 30.8 | | 26 | 35.5 | | 39 | 36.0 | | 26 | 50.0 | C | 18 | 35.9 | |
| | 25 | 27.0 | | 25 | 27.2 | | | | | 6 | 24.2 | | 20 | 28.9 | | 13 | 26.3 | |
| 6 | | | | | | | | | | 26 | 36.0 | | | | | 15 | 27.5 | |
| | | | | | | | | | | 24 | 32.9 | | | | | 17 | 38.2 | |
| | | | | | | | | | | 18 | 30.2 | | | | | 22 | 48.9 | C |
| | | | | | | | | | | | | | | | | 19 | 29.5 | |

| Test Level | Maximum Score | Floor (F) Effect Below | Ceiling (C) Effect Above |
|---|---|---|---|
| Red | 90 | 27 | 63 |
| Green | 60 | 18 | 42 |
| Brown | 60 | 18 | 42 |

## TABLE C.10

## MEAN RAW SCORES ON THE SDRT REPORTED BY CLASS

Site: TEXAS School: COMPARISON

| GRADE | SDRT TEST POINTS | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPRING 1977 | | | FALL 1977 | | | SPRING 1978 | | | FALL 1978 | | | SPRING 1979 | | | FALL 1979 | | |
| | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind |
| 1 | 21<br>21<br>24<br>21<br>23 | 58.3<br>53.3<br>56.6<br>59.0<br>55.1 | | | | | | | | | | | 31<br>15<br>23<br>27<br>18 | 75.[illegible]<br>37.9<br>57.0<br>66.1<br>43.9 | C<br><br><br>C<br> | | | |
| 2 | 29<br>26<br>27<br>30<br>12 | 83.8<br>78.5<br>77.1<br>85.9<br>78.7 | C<br>C<br>C<br>C<br>C | 26<br>28<br>28<br>26<br>14 | 59.6<br>61.4<br>61.3<br>59.5<br>36.3 | | 25<br>25<br>26<br>27<br>9 | 79.4<br>79.4<br>80.1<br>78.6<br>60.5 | C<br>C<br>C<br>C<br> | 34<br>22<br>26<br>14<br>23<br>22 | 81.3<br>51.5<br>75.9<br>48.8<br>55.6<br>49.6 | C<br><br>C<br><br><br> | 30<br>18<br>29<br>22<br>25<br>18 | 88.2<br>73.4<br>85.3<br>67.4<br>80.7<br>69.7 | C<br>C<br>C<br>C<br>C<br>C | 25<br>19<br>21<br>15 | 77.8<br>59.8<br>67.2<br>49.1 | C<br><br>C<br> |
| 3 | 29<br>29<br>26<br>28 | 43.6<br>42.4<br>44.5<br>46.5 | C<br>C<br>C<br>C | 28<br>21<br>23<br>26<br>26 | 35.7<br>43.0<br>44.2<br>36.9<br>38.2 | <br>C<br>C<br><br> | 25<br>20<br>21<br>29<br>25 | 47.1<br>50.5<br>48.2<br>48.2<br>47.7 | C<br>C<br>C<br>C<br>C | 28<br>17<br>32<br>34 | 41.2<br>25.6<br>31.9<br>49.0 | <br><br><br>C | 29<br>18<br>39<br>28 | 47.4<br>39.4<br>43.6<br>53.8 | C<br><br>C<br>C | 28<br>18<br>24<br>13<br>21<br>15 | 50.4<br>30.1<br>49.4<br>26.9<br>38.1<br>28.2 | C<br><br>C<br><br><br> |
| 4 | 25<br>25<br>25<br>23<br>25 | 52.5<br>49.7<br>54.4<br>51.6<br>53.5 | C<br>C<br>C<br>C<br>C | 25<br>25<br>27<br>32 | 46.3<br>49.6<br>47.2<br>44.8 | C<br>C<br>C<br>C | 25<br>26<br>31<br>26 | 51.9<br>51.4<br>48.9<br>49.9 | C<br>C<br>C<br>C | 33<br>34<br>27<br>20 | 36.7<br>53.1<br>46.4<br>38.4 | C<br>C<br>C<br> | 32<br>31<br>28<br>16<br>5 | 56.3<br>54.0<br>49.7<br>43.3<br>49.6 | C<br>C<br>C<br>C<br>C | 27<br>13<br>29<br>25 | 48.3<br>40.0<br>45.1<br>55.8 | C<br><br>C<br>C |
| 5 | 25<br>31<br>30<br>28 | 34.6<br>34.4<br>34.7<br>38.5 | | 21<br>24<br>26<br>22<br>50<br>55<br>26 | 32.0<br>28.9<br>28.0<br>31.7<br>35.8<br>30.2<br>37.9 | | 23<br>21<br>24<br>22<br>26 | 35.2<br>37.4<br>36.4<br>43.0<br>37.7 | <br><br><br>C<br> | 29<br>22<br>28<br>30 | 27.9<br>31.3<br>29.4<br>33.2 | | 29<br>23<br>25<br>26 | 29.9<br>32.2<br>33.7<br>38.4 | | 25<br>27<br>26<br>17<br>5 | 41.2<br>31.2<br>25.2<br>19.3<br>21.8 | |
| 6 | | | | | | | | | | 17<br>15<br>16<br>20<br>22 | 37.3<br>35.5<br>35.3<br>44.5<br>34.3 | <br><br><br>C<br> | | | | 24<br>18<br>23<br>26 | 31.6<br>30.3<br>28.3<br>36.2 | |

| Test Level | Maximum Score | Floor (F) Effect Below | Ceiling (C) Effect Above |
|---|---|---|---|
| Red | 90 | 27 | 63 |
| Green | 60 | 1 | 42 |
| Brown | 50 | 18 | 42 |

## TABLE C.11

## MEAN RAW SCORES ON THE SDRT REPORTED BY CLASS

Site: WEST VIRGINIA School: SPECIAL EMPHASIS

| GRADE | SDRT TEST POINTS | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPRING 1977 | | | FALL 1977 | | | SPRING 1978 | | | FALL 1978 | | | SPRING 1979 | | | FALL 1979 | | |
| | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind |
| 1 | 27<br>25 | 44.9<br>39.7 | | | | | 24<br>22<br>26 | 52.7<br>50.2<br>60.3 | | | | | 24<br>24<br>24 | 45.7<br>52.8<br>51.0 | | | | |
| 2 | 21<br>31 | 55.0<br>83.8 | <br>C | 29<br>21 | 56.9<br>31.1 | | 32<br>23 | 83.5<br>70.0 | C<br>C | 40<br>24 | 69.0<br>43.0 | C | 40<br>3[illegible] | 84.4<br>71.7 | C<br>C | 21<br>23<br>24 | 47.6<br>53.8<br>51.7 | |
| 3 | 30<br>20 | 49.6<br>28.1 | C | 27<br>26 | 37.5<br>17.7 | <br>F | 26<br>24 | 50.4<br>38.4 | C | 32 | 42.1 | C | 33 | 52.5 | C | 31<br>7 | 45.5<br>30.4 | C |
| 4 | 33<br>26 | 53.5<br>37.7 | C | 28<br>23 | 50.5<br>20.9 | C | 33<br>13 | 53.9<br>41.7 | C | 26<br>27 | 50.0<br>34.8 | C | 27<br>28 | 54.5<br>45.6 | C<br>C | 30 | 53.1 | C |
| 5 | 24<br>27 | 22.3<br>32.5 | | 32<br>29 | 29.6<br>18.5 | | 35<br>12 | 35.9<br>26.2 | | 11<br>11 | 38.4<br>38.2 | | 11<br>11 | 49.3<br>45.4 | C<br>C | 14 | 38.9 | |
| 6 | 30<br>31 | 43.5<br>19.0 | C | 29<br>31 | 37.5<br>18.8 | | 32<br>14 | 47.5<br>35.7 | C | 24<br>25 | 29.0<br>34.8 | | 23<br>24 | 38.7<br>41.2 | | 20<br>14 | 36.6<br>36.6 | |
| 7 | | | | 34<br>29 | 40.3<br>20.9 | | | | | 33<br>31 | 25.6<br>45.7 | <br>C | | | | 31<br>30 | 35.1<br>42.7 | <br>C |

| Test Level | Maximum Score | Floor (F) Effect Below | Ceiling (C) Effect Above |
|---|---|---|---|
| Red | 90 | 27 | 63 |
| Green | 60 | 18 | 42 |
| Brown | 60 | 18 | 42 |

# TABLE C.12

# MEAN RAW SCORES ON THE SDRT REPORTED BY CLASS

Site: WEST VIRGINIA School: COMPARISON

| | SDRT TEST POINTS | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPRING 1977 | | | FALL 1977 | | | SPRING 1978 | | | FALL 1978 | | | SPRING 1979 | | | FALL 1979 | | |
| GRADE | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind |
| 1 | 31 | 44.0 | | | | | 30 | 38.2 | | | | | 18 | 43.7 | | | | |
| | 26 | 40.5 | | | | | 25 | 49.7 | | | | | 16 | 46.5 | | | | |
| 2 | 19 | 43.9 | | 30 | 24.3 | F | 32 | 63.6 | C | 21 | 47.7 | | 22 | 72.5 | C | 19 | 42.0 | |
| | 25 | 78.7 | C | 29 | 49.8 | | 35 | 75.2 | C | 7 | 72.8 | C | 7 | 85.8 | C | 14 | 51.8 | |
| | | | | | | | | | | 26 | 46.8 | | 27 | 62.5 | | | | |
| 3 | 25 | 39.8 | | 27 | 27.1 | | 28 | 37.2 | | 26 | 30.1 | | 23 | 42.6 | C | 19 | 30.1 | |
| | 22 | 35.4 | | 23 | 26.1 | | 19 | 48.8 | C | 28 | 23.7 | | 25 | 32.7 | | 8 | 47.6 | C |
| | | | | | | | | | | | | | | | | 23 | 29.2 | |
| 4 | 27 | 42.4 | C | 18 | 45.7 | C | 19 | 55.1 | C | 25 | 46.3 | C | 22 | 50.3 | C | 23 | 41.8 | |
| | 25 | 44.7 | C | 29 | 36.7 | | 24 | 45.8 | C | 26 | 33.7 | | 26 | 38.0 | | 18 | 34.6 | |
| 5 | 41 | 33.1 | | 25 | 23.6 | | 25 | 34.9 | | 26 | 32.7 | | 28 | 38.3 | | 21 | 27.5 | |
| | 15 | 18.9 | | 27 | 19.3 | | 29 | 28.2 | | 27 | 23.9 | | 24 | 27.0 | | 22 | 22.1 | |
| 6 | 26 | 41.7 | | 21 | 25.4 | | 22 | 36.6 | | 25 | 29.1 | | 23 | 34.9 | | 24 | 35.8 | |
| | 28 | 23.1 | | 21 | 28.1 | | 19 | 41.8 | | 24 | 30.9 | | 21 | 34.1 | | 23 | 31.4 | |
| | | | | 17 | 25.7 | | 20 | 35.6 | | | | | | | | | | |
| 7 | | | | 29 | 39.1 | | | | | 32 | 43.7 | C | | | | 19 | 36.4 | |
| | | | | 25 | 17.0 | F | | | | | | | | | | 17 | 39.3 | |

| Test Level | Maximum Score | Floor (F) Effect Below | Ceiling (C) Effect Above |
|---|---|---|---|
| Red | 90 | 27 | 63 |
| Green | 60 | 18 | 42 |
| Brown | 60 | 18 | 42 |

## TABLE C.13

## MEAN RAW SCORES ON THE SDRT REPORTED BY CLASS

Site: CALIFORNIA School: SPECIAL EMPHASIS

| | SDRT TEST POINTS | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPRING 1977 | | | FALL 1977 | | | SPRING 1978 | | | FALL 1978 | | | SPRING 1979 | | | FALL 1979 | | |
| GRADE | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind |
| 1 | | | | | | | 24 | 60.1 | | | | | 14 | 64.3 | C | | | |
| | | | | | | | 12 | 81.2 | C | | | | 20 | 64.0 | C | | | |
| 2 | | | | 10 | 44.5 | | 13 | 77.1 | C | 13 | 60.8 | | 13 | 79.3 | C | 11 | 74.4 | C |
| | | | | 27 | 70.2 | C | 25 | 79.7 | C | 27 | 65.4 | C | 24 | 82.8 | C | 14 | 76.1 | C |
| 3 | | | | 26 | 37.0 | | 26 | 47.8 | C | 27 | 31.4 | | 26 | 38.1 | | 13 | 40.7 | |
| | | | | | | | | | | 9 | 42.2 | C | 12 | 45.0 | C | 18 | 38.0 | |
| 4 | | | | 27 | 50.7 | C | 22 | 52.8 | C | 15 | 37.7 | | 19 | 42.4 | C | 21 | 38.8 | |
| | | | | 7 | 34.1 | | 7 | 51.4 | C | 17 | 46.7 | C | 19 | 50.2 | C | 10 | 46.3 | C |
| 5 | | | | 31 | 25.7 | | 15 | 26.7 | | 11 | 35.4 | | 9 | 41.2 | | 14 | 23.6 | |
| | | | | 16 | 18.5 | | 14 | 37.3 | | 23 | 33.2 | | 22 | 32.8 | | 14 | 27.7 | |
| | | | | 15 | 33.3 | | | | | | | | | | | | | |
| 6 | | | | 11 | 43.7 | C | 9 | 49.9 | C | 36 | 31.2 | | 4 | 46.7 | C | 7 | 46.1 | C |
| | | | | 21 | 25.1 | | 16 | 35.0 | | | | | 29 | 39.8 | | 19 | 38.5 | |
| 7 | | | | | | | | | | 21 | 37.7 | | | | | 13 | 19.5 | |

| Test Level | Maximum Score | Floor (F) Effect Below | Ceiling (C) Effect Above |
|---|---|---|---|
| Red | 90 | 27 | 63 |
| Green | 60 | 18 | 42 |
| Brown | 60 | 18 | 42 |

## TABLE C.14

## MEAN RAW SCORES ON THE SDRT REPORTED BY CLASS

Site: CALIFORNIA School: COMPARISON

| GRADE | SDRT TEST POINTS | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPRING 1977 | | | FALL 1977 | | | SPRING 1978 | | | FALL 1978 | | | SPRING 1979 | | | FALL 1979 | | |
| | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind |
| 1 | | | | | | | 14 | 38.0 | | | | | | | | | | |
| | | | | | | | 18 | 40.8 | | | | | | | | | | |
| 2 | | | | 23 | 67.6 | C | 25 | 79.9 | C | 25 | 40.2 | | 19 | 61.2 | | 5 | 67.0 | C |
| | | | | 24 | 58.7 | | 23 | 85.2 | C | 13 | 47.8 | | 11 | 69.5 | C | 3 | 87.7 | C |
| 3 | | | | 24 | 37.9 | | 21 | 47.6 | C | 29 | 33.6 | | 26 | 48.8 | C | 10 | 24.5 | |
| | | | | 28 | 25.7 | | 20 | 43.3 | C | 15 | 44.0 | C | 14 | 45.3 | C | 11 | 25.4 | |
| 4 | | | | 28 | 39.1 | | 21 | 47.4 | C | 29 | 39.1 | | 23 | 46.4 | C | 7 | 44.6 | C |
| | | | | 10 | 40.6 | | 11 | 41.8 | | 27 | 41.4 | | 25 | 45.4 | C | 7 | 51.1 | C |
| 5 | | | | 15 | 15.8 | F | 14 | 15.4 | F | 26 | 25.6 | | 30 | 24.5 | | 15 | 20.3 | |
| | | | | 27 | 19.0 | | 30 | 22.8 | | 13 | 26.7 | | 13 | 31.1 | | 17 | 19.5 | |
| | | | | 10 | 25.2 | | 8 | 37.4 | | | | | | | | | | |
| 6 | | | | 17 | 28.6 | | 12 | 36.7 | | 33 | 25.3 | | 29 | 26.1 | | 9 | 19.3 | |
| | | | | 31 | 23.4 | | 28 | 34.3 | | 15 | 22.0 | | 14 | 28.2 | | 16 | 34.3 | |
| 7 | | | | | | | | | | | | | | | | 3 | 20.7 | |

| Test Level | Maximum Score | Floor (F) Effect Below | Ceiling (C) Effect Above |
|---|---|---|---|
| Red | 90 | 27 | 63 |
| Green | 60 | 18 | 42 |
| Brown | 60 | 18 | 42 |

# APPENDIX D

## FREQUENCY ANALYSIS OF STUDENTS MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION

## TABLE D.1

## FREQUENCY ANALYSIS OF STUDENTS MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION*

**Project Year 1977-78**

Site: LOUISIANA
School: Special Emphasis

| SPRING 1977 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 47 | N/A | N/A |
| 2 | 42 | 7 | 17% |
| 3 | 36 | 8 | 22% |
| 4 | 53 | 30 | 57% |
| 5 | 35 | 22 | 63% |
| 6 | 53 | 31 | 59% |
| TOTAL | 266 | 98 | 37% |

| SPRING 1977 TO SPRING 1978. | | | | | |
|---|---|---|---|---|---|
| Grade Spr 77 | Grade Spr 78 | Total students tested at both points | No. >1 yr below grade Spr 77 | No. >1 yr below grade Spr 78 | No. >1 yr below grade at both points |
| 1 | 1 | 5 | N/A | N/A | N/A |
| 1 | 2 | 27 | N/A | 3 | N/A |
| 2 | 2 | 2 | 2 | 0 | 0 |
| 2 | 3 | 30 | 5 | 8 | 4 |
| 3 | 3 | 1 | 1 | 0 | 0 |
| 3 | 4 | 26 | 4 | 12 | 4 |
| 4 | 4 | 9 | 9 | 8 | 8 |
| 4 | 5 | 34 | 15 | 18 | 13 |
| 5 | 5 | 5 | 4 | 2 | 2 |
| 5 | 6 | 25 | 16 | 16 | 14 |
| 6 | 6 | 13 | 12 | 9 | 9 |
| | | | | | |

**Project Year 1977-78**

Site: LOUISIANA
School: Comparison

| SPRING 1977 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 135 | N/A | N/A |
| 2 | 111 | 21 | 19% |
| 3 | 86 | 20 | 23% |
| 4 | 136 | 72 | 53% |
| 5 | 92 | 57 | 62% |
| 6 | 130 | 72 | 55% |
| TOTAL | 690 | 242 | 35% |

| SPRING 1977 TO SPRING 1978 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 77 | Grade Spr 78 | Total students tested at both points | No. >1 yr below grade Spr 77 | No. >1 yr below grade Spr 78 | No. >1 yr below grade at both points |
| 1 | 1 | 22 | N/A | N/A | N/A |
| 1 | 2 | 76 | N/A | 8 | N/A |
| 2 | 2 | 9 | 4 | 2 | 2 |
| 2 | 3 | 69 | 7 | 9 | 7 |
| (Not available due to coding error) | | | | | |
| 4 | 4 | 9 | 8 | 8 | 8 |
| 4 | 5 | 81 | 40 | 52 | 37 |
| 5 | 5 | 1 | 1 | 1 | 1 |
| 5 | 6 | 67 | 38 | 35 | 32 |
| 6 | 6 | 1 | 0 | 1 | 0 |
| | | | | | |

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*Excluding students designated as having learning problems.

BEST AVAILABLE COPY

# TABLE D.2

## FREQUENCY ANALYSIS OF STUDENTS MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION*

Project Year 1978-79

Site: LOUISIANA
School: Special Emphasis

| SPRING 1978 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 40 | N/A | N/A |
| 2 | 36 | 3 | 8% |
| 3 | 45 | 13 | 29% |
| 4 | 44 | 26 | 59% |
| 5 | 42 | 20 | 48% |
| 6 | 48 | 33 | 69% |
| TOTAL | 255 | 95 | 37% |

| SPRING 1978 TO SPRING 1979 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 78 | Grade Spr 79 | Total students tested at both points | No. >1 yr below grade Spr 78 | No. >1 yr below grade Spr 79 | No. >1 yr below grade at both points |
| 1 | 2 | 26 | N/A | 4 | N/A |
| 2 | 2 | 1 | 0 | 0 | 0 |
| 2 | 3 | 29 | 2 | 7 | 2 |
| 3 | 3 | 5 | 5 | 2 | 2 |
| 3 | 4 | 27 | 3 | 9 | 2 |
| 4 | 4 | 3 | 3 | 2 | 2 |
| 4 | 5 | 30 | 17 | 21 | 17 |
| 5 | 5 | 3 | 1 | 0 | 0 |
| 5 | 6 | 35 | 15 | 17 | 15 |
| 6 | 6 | 11 | 11 | 7 | 7 |
| | | | | | |

Project Year 1978-79

Site: LOUISIANA
School: Comparison

| SPRING 1978 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 116 | N/A | N/A |
| 2 | 112 | 13 | 12% |
| 3 | 88 | 15 | 17% |
| 4 | 96 | 49 | 51% |
| 5 | 100 | 65 | 65% |
| 6 | 86 | 48 | 56% |
| TOTAL | 598 | 190 | 32% |

| SPRING 1978 TO SPRING 1979 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 78 | Grade Spr 79 | Total students tested at both points | No. >1 yr below grade Spr 78 | No. >1 yr below grade Spr 79 | No. >1 yr below grade at both points |
| 1 | 1 | 22 | N/A | N/A | N/A |
| 1 | 2 | 66 | N/A | 3 | N/A |
| 2 | 2 | 24 | 5 | 1 | 1 |
| 2 | 3 | 63 | 3 | 10 | 3 |
| 3 | 3 | 1 | 0 | 0 | 0 |
| 3 | 4 | 70 | 8 | 24 | 8 |
| 4 | 5 | 64 | 30 | 43 | 29 |
| 5 | 5 | 6 | 6 | 6 | 6 |
| 5 | 6 | 67 | 40 | 40 | 38 |
| 6 | 6 | 4 | 4 | 3 | 3 |
| | | | | | |

*Excluding students designated as having learning problems.

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## TABLE D.3

## FREQUENCY ANALYSIS OF STUDENTS MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION*

**Site:** LOUISIANA
**School:** Special Emphasis

| | SPRING 1979 | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 44 | N/A | N/A |
| 2 | 36 | 4 | 11% |
| 3 | 43 | 10 | 23% |
| 4 | 41 | 14 | 34% |
| 5 | 40 | 25 | 63% |
| 6 | 55 | 27 | 49% |
| TOTAL | 259 | 80 | 31% |

**Site:** LOUISIANA
**School:** Comparison

| | SPRING 1979 | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 106 | N/A | N/A |
| 2 | 113 | 8 | 7% |
| 3 | 91 | 17 | 19% |
| 4 | 91 | 35 | 39% |
| 5 | 92 | 64 | 70% |
| 6 | 105 | 65 | 62% |
| TOTAL | 598 | 189 | 32% |

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*Excluding students designated as having learning problems.

## TABLE D.4

## FREQUENCY ANALYSIS OF STUDENTS MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION*

Project Year 1977-78

Site: MICHIGAN
School: Special Emphasis

| SPRING 1977 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 111 | N/A | N/A |
| 2 | 118 | 22 | 19% |
| 3 | 92 | 24 | 26% |
| 4 | 89 | 49 | 55% |
| 5 | 105 | 74 | 71% |
| 6 | 110 | 71 | 65% |
| TOTAL | 625 | 240 | 38% |

| SPRING 1977 TO SPRING 1978 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 77 | Grade Spr 78 | Total students tested at both points | No. >1 yr below grade Spr 77 | No. >1 yr below grade Spr 78 | No. >1 yr below grade at both points |
| 1 | 1 | 6 | N/A | N/A | N/A |
| 1 | 2 | 79 | N/A | 7 | N/A |
| 2 | 2 | 3 | 2 | 3 | 2 |
| 2 | 3 | 85 | 12 | 20 | 12 |
| 3 | 3 | 1 | 1 | 0 | 0 |
| 3 | 4 | 65 | 18 | 37 | 16 |
| 4 | 4 | 2 | 2 | 1 | 1 |
| 4 | 5 | 69 | 38 | 46 | 36 |
| 5 | 6 | 80 | 57 | 57 | 52 |
| 6 | 6 | 1 | 1 | 1 | 1 |
| | | | | | |

Project Year 1977-78

Site: MICHIGAN
School: Comparison

| SPRING 1977 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 96 | N/A | N/A |
| 2 | 78 | 22 | 28% |
| 3 | 87 | 21 | 24% |
| 4 | 89 | 49 | 55% |
| 5 | 90 | 76 | 84% |
| 6 | 89 | 62 | 70% |
| TOTAL | 529 | 230 | 44% |

| SPRING 1977 TO SPRING 1978 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 77 | Grade Spr 78 | Total students tested at both points | No. >1 yr below grade Spr 77 | No. >1 yr below grade Spr 78 | No. >1 yr below grade at both points |
| 1 | 1 | 3 | N/A | N/A | N/A |
| 1 | 2 | 59 | N/A | 7 | N/A |
| 2 | 2 | 2 | 2 | 2 | 2 |
| 2 | 3 | 54 | 10 | 11 | 5 |
| 3 | 3 | 8 | 8 | 3 | 3 |
| 3 | 4 | 56 | 10 | 25 | 9 |
| 4 | 5 | 66 | 32 | 52 | 31 |
| 5 | 6 | 60 | 47 | 45 | 44 |
| N/A | | N/A | N/A | N/A | N/A |
| | | | | | |

*Excluding students designated as having learning problems.

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## TABLE D.5

## FREQUENCY ANALYSIS OF STUDENTS MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION*

Project Year 1978-79

Site: MICHIGAN
School: Special Emphasis

| SPRING 1978 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 108 | N/A | N/A |
| 2 | 115 | 13 | 11% |
| 3 | 102 | 25 | 25% |
| 4 | 93 | 54 | 58% |
| 5 | 90 | 63 | 70% |
| 6 | 97 | 69 | 71% |
| TOTAL | 605 | 224 | 37% |

| SPRING 1978 TO SPRING 1979 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 78 | Grade Spr 79 | Total students tested at both points | No. >1 yr below grade Spr 78 | No. >1 yr below grade Spr 79 | No. >1 yr below grade at both points |
| 1 | 2 | 82 | N/A | 0 | N/A |
| 2 | 3 | 90 | 9 | 12 | 8 |
| 3<br>3 | 3<br>4 | 5<br>82 | 4<br>16 | 2<br>43 | 2<br>15 |
| 4 | 5 | 77 | 44 | 56 | 42 |
| 5 | 5 | 2 | 2 | 2 | 2 |
| N/A | | N/A | N/A | N/A | N/A |
| | | | | | |

Project Year 1978-79

Site: MICHIGAN
School: Comparison

| SPRING 1978 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 89 | N/A | N/A |
| 2 | 99 | 25 | 25% |
| 3 | 84 | 17 | 20% |
| 4 | 77 | 34 | 44% |
| 5 | 93 | 72 | 77% |
| 6 | 75 | 57 | 76% |
| TOTAL | 517 | 205 | 40% |

| SPRING 1978 TO SPRING 1979 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 78 | Grade Spr 79 | Total students tested at both points | No. >1 yr below grade Spr 78 | No. >1 yr below grade Spr 79 | No. >1 yr below grade at both points |
| 1 | 2 | 60 | N/A | 3 | N/A |
| 2<br>2 | 2<br>3 | 5<br>71 | 2<br>10 | 0<br>11 | 0<br>5 |
| 3 | 4 | 66 | 13 | 38 | 13 |
| 4 | 5 | [illegible] | 32 | 37 | 29 |
| N/A | | N/A | N/A | N/A | N/A |
| N/A | | N/A | N/A | N/A | N/A |
| | | | | | |

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*Excluding students designated as having learning problems.

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## TABLE D.6

## FREQUENCY ANALYSIS OF STUDENTS MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION *

**Site:** MICHIGAN
**School:** Special Emphasis

| SPRING 1979 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 94 | N/A | N/A |
| 2 | 106 | 4 | 4% |
| 3 | 124 | 22 | 18% |
| 4 | 106 | 60 | 57% |
| 5 | 105 | 80 | 76% |
| TOTAL | 535 | 166 | 31% |
| | | | |

**Site:** MICHIGAN
**School:** Comparison

| SPRING 1979 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 94 | N/A | N/A |
| 2 | 91 | 7 | 8% |
| 3 | 96 | 19 | 20% |
| 4 | 84 | 50 | 60% |
| 5 | 84 | 53 | 63% |
| TOTAL | 449 | 129 | 29% |
| | | | |

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*Excluding students designated as having learning problems.

## TABLE D.7

## FREQUENCY ANALYSIS OF STUDENTS MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION*

### Project Year 1977-78

Site: OHIO
School: Special Emphasis

| SPRING 1977 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 51 | N/A | N/A |
| 2 | 45 | 8 | 18% |
| 3 | 48 | 14 | 29% |
| 4 | 47 | 16 | 34% |
| 5 | 47 | 20 | 43% |
| 6 | 50 | 20 | 40% |
| TOTAL | 288 | 78 | 27% |

| SPRING 1977 TO SPRING 1978 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 77 | Grade Spr 78 | Total students tested at both points | No. >1 yr below grade Spr 77 | No. >1 yr below grade Spr 78 | No. >1 yr below grade at both points |
| 1 | 2 | 37 | N/A | 6 | N/A |
| 2 | 3 | 29 | 6 | 4 | 6 |
| 3 | 4 | 39 | 12 | 20 | 12 |
| 4 | 5 | 35 | 9 | 22 | 9 |
| 5 | 6 | 35 | 13 | 13 | 10 |
| N/A | | N/A | N/A | N/A | N/A |
| | | | | | |

### Project Year 1977-78

Site: OHIO
School: Comparison

| SPRING 1977 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 38 | N/A | N/A |
| 2 | 50 | 7 | 14% |
| 3 | 35 | 6 | 17% |
| 4 | 43 | 25 | 58% |
| 5 | 37 | 26 | 70% |
| 6 | 43 | 20 | 47% |
| TOTAL | 266 | 84 | 32% |

| SPRING 1977 TO SPRING 1978 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 77 | Grade Spr 78 | Total students tested at both points | No. >1 yr below grade Spr 77 | No. >1 yr below grade Spr 78 | No. >1 yr below grade at both points |
| 1 | 2 | 40 | N/A | 3 | N/A |
| 2<br>2 | 2<br>3 | 1<br>33 | 1<br>4 | 1<br>4 | 1<br>3 |
| 3 | 4 | 18 | 2 | 8 | 2 |
| 4 | 5 | 28 | 14 | 17 | 12 |
| 5<br>5 | 5<br>6 | 1<br>24 | 1<br>18 | 1<br>14 | 1<br>14 |
| N/A | | N/A | N/A | N/A | N/A |
| | | | | | |

*Excluding students designated as having learning problems.

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## TABLE D.8

## FREQUENCY ANALYSIS OF STUDENTS MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION*

**Project Year 1977-78**

Site: TENNESSEE
School: Special Emphasis

| SPRING 1977 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 44 | N/A | N/A |
| 2 | 49 | 15 | 31% |
| 3 | 35 | 15 | 43% |
| 4 | 53 | 27 | 51% |
| 5 | 56 | 36 | 64% |
| 6 | 77 | 48 | 62% |
| TOTAL | 314 | 141 | 45% |

| SPRING 1977 TO SPRING 1978 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 77 | Grade Spr 78 | Total students tested at both points | No. >1 yr below grade Spr 77 | No. >1 yr below grade Spr 78 | No. >1 yr below grade at both points |
| 1 | 1 | 2 | N/A | N/A | N/A |
| 1 | 2 | 33 | N/A | 5 | N/A |
| 2 | 3 | 40 | 10 | 9 | 8 |
| 3 | 3 | 1 | 1 | 0 | 0 |
| 3 | 4 | 27 | 11 | 16 | 10 |
| 4 | 4 | 4 | 4 | 2 | 2 |
| 4 | 5 | 42 | 20 | 28 | 18 |
| 5 | 5 | 3 | 3 | 3 | 3 |
| 5 | 6 | 42 | 24 | 26 | 23 |
| 6 | 6 | 5 | 5 | 5 | 5 |
| | | | | | |

**Project Year 1977-78**

Site: TENNESSEE
School: Comparison

| SPRING 1977 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 32 | N/A | N/A |
| 2 | 31 | 1 | 3% |
| 3 | 19 | 8 | 42% |
| 4 | 24 | 11 | 46% |
| 5 | 22 | 16 | 73% |
| 6 | 33 | 18 | 55% |
| TOTAL | 161 | 54 | 34% |

| SPRING 1977 TO SPRING 1978 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 77 | Grade Spr 78 | Total students tested at both points | No. >1 yr below grade Spr 77 | No. >1 yr below grade Spr 78 | No. >1 yr below grade at both points |
| 1 | 1 | 4 | N/A | N/A | N/A |
| 1 | 2 | 22 | N/A | 2 | N/A |
| 2 | 2 | 1 | 0 | 0 | 0 |
| 2 | 3 | 21 | 0 | 0 | 0 |
| 3 | 3 | 2 | 2 | 0 | 0 |
| 3 | 4 | 13 | 3 | 2 | 1 |
| 4 | 4 | 3 | 3 | 1 | 1 |
| 4 | 5 | 14 | 4 | 7 | 4 |
| 5 | 6 | 19 | 13 | 12 | 12 |
| 6 | 6 | 1 | 1 | 0 | 0 |
| | | | | | |

*Excluding students designated as having learning problems.

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## TABLE D.9

## FREQUENCY ANALYSIS OF STUDENTS MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION*

Project Year 1978-79

Site: TENNESSEE
School: Special Emphasis

| SPRING 1978 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 45 | N/A | N/A |
| 2 | 43 | 6 | 14% |
| 3 | 50 | 10 | 20% |
| 4 | 34 | 18 | 53% |
| 5 | 52 | 33 | 64% |
| 6 | 55 | 36 | 66% |
| TOTAL | 279 | 103 | 37% |

| SPRING 1978 TO SPRING 1979 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 78 | Grade Spr 79 | Total students tested at both points | No. >1 yr below grade Spr 78 | No. >1 yr below grade Spr 79 | No. >1 yr below grade at both points |
| 1<br>1 | 1<br>2 | 1<br>34 | N/A<br>N/A | N/A<br>0 | N/A<br>N/A |
| 2<br>2 | 2<br>3 | 2<br>31 | 2<br>3 | 0<br>4 | 0<br>1 |
| 3<br>3 | 3<br>4 | 5<br>37 | 4<br>2 | 3<br>7 | 3<br>2 |
| 4<br>4 | 4<br>5 | 5<br>25 | 5<br>12 | 2<br>16 | 2<br>9 |
| 5<br>5 | 5<br>6 | 3<br>14 | 3<br>6 | 3<br>5 | 3<br>5 |
| 6 | 6 | 3 | 3 | 3 | 3 |
| | | | | | |

Project Year 1978-79

Site: TENNESSEE
School: Comparison

| SPRING 1978 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 38 | N/A | N/A |
| 2 | 27 | 2 | 7% |
| 3 | 26 | 1 | 4% |
| 4 | 23 | 4 | 17% |
| 5 | 17 | 10 | 59% |
| 6 | 24 | 14 | 58% |
| TOTAL | 157 | 31 | 20% |

| SPRING 1978 TO SPRING 1979 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 78 | Grade Spr 79 | Total students tested at both points | No. >1 yr below grade Spr 78 | No. >1 yr below grade Spr 79 | No. >1 yr below grade at both points |
| 1<br>1 | 1<br>2 | 5<br>17 | N/A<br>N/A | N/A<br>0 | N/A<br>N/A |
| 2 | 3 | 20 | 1 | 2 | 1 |
| 3<br>3 | 3<br>4 | 1<br>23 | 0<br>1 | 0<br>5 | 0<br>1 |
| 4 | 5 | 21 | 3 | 8 | 3 |
| 5 | 6 | 18 | 11 | 9 | 9 |
| N/A | | N/A | N/A | N/A | N/A |
| | | | | | |

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*Excluding students designated as having learning problems.

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## TABLE D.10

## FREQUENCY ANALYSIS OF STUDENTS MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION *

**Site:** TENNESSEE
**School:** Special Emphasis

| SPRING 1979 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 38 | N/A | N/A |
| 2 | 42 | 0 | 0 |
| 3 | 43 | 7 | 16% |
| 4 | 54 | 11 | 20% |
| 5 | 33 | 20 | 60% |
| 6 | 20 | 9 | 45% |
| TOTAL | 230 | 47 | 20% |

**Site:** TENNESSEE
**School:** Comparison

| SPRING 1979 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 36 | N/A | N/A |
| 2 | 20 | 0 | 0 |
| 3 | 25 | 2 | 8% |
| 4 | 29 | 6 | 21% |
| 5 | 29 | 13 | 45% |
| 6 | 22 | 11 | 50% |
| TOTAL | 161 | 32 | 20% |

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*Excluding students designated as having learning problems.

# TABLE D.11

## FREQUENCY ANALYSIS OF STUDENTS MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION*

**Project Year 1977-78**

**Site: TEXAS**
**School: Special Emphasis**

| SPRING 1977 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 116 | N/A | N/A |
| 2 | 96 | 7 | 7% |
| 3 | 81 | 6 | 7% |
| 4 | 79 | 17 | 22% |
| 5 | 106 | 55 | 52% |
| TOTAL | 478 | 85 | 18% |
| | | | |

| SPRING 1977 TO SPRING 1978 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 77 | Grade Spr 78 | Total students tested at both points | No. >1 yr below grade Spr 77 | No. >1 yr below grade Spr 78 | No. >1 yr below grade at both points |
| 1 | 2 | 85 | N/A | 6 | N/A |
| 2<br>2 | 2<br>3 | 2<br>65 | 0<br>4 | 0<br>7 | 0<br>3 |
| 3 | 4 | 61 | 2 | 12 | 2 |
| 4 | 5 | 65 | 13 | 19 | 10 |
| N/A | | N/A | N/A | N/A | N/A |
| | | | | | |
| | | | | | |

**Project Year 1977-78**

**Site: TEXAS**
**School: Comparison**

| SPRING 1977 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 110 | N/A | N/A |
| 2 | 124 | 4 | 3% |
| 3 | 112 | 17 | 15% |
| 4 | 124 | 31 | 25% |
| 5 | 114 | 49 | 43% |
| TOTAL | 584 | 101 | 17% |
| | | | |

| SPRING 1977 TO SPRING 1978 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 77 | Grade Spr 78 | Total students tested at both points | No. >1 yr below grade Spr 77 | No. >1 yr below grade Spr 78 | No. >1 yr below grade at both points |
| 1 | 2 | 71 | N/A | 5 | N/A |
| 2<br>2 | 2<br>3 | 1<br>90 | 1<br>0 | 0<br>4 | 0<br>0 |
| 3<br>3 | 3<br>4 | 2<br>79 | 2<br>11 | 1<br>26 | 1<br>10 |
| 4 | 5 | 89 | 19 | 30 | 16 |
| 5 | 5 | 2 | 1 | 1 | 1 |
| | | | | | |
| | | | | | |

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*Excluding students designated as having learning problems.

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## TABLE D.12

## FREQUENCY ANALYSIS OF STUDENTS MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION*

Project Year 1978-79

Site: TEXAS
School: Special Emphasis

| SPRING 1978 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | - | N/A | N/A |
| 2 | 114 | 7 | 6% |
| 3 | 90 | 11 | 12% |
| 4 | 85 | 22 | 26% |
| 5 | 81 | 28 | 35% |
| TOTAL | 370 | 68 | 18% |
| | | | |

| SPRING 1978 TO SPRING 1979 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 78 | Grade Spr 79 | Total students tested at both points | No. >1 yr below grade Spr 78 | No. >1 yr below grade Spr 79 | No. >1 yr below grade at both points |
| N/A | | N/A | N/A | N/A | N/A |
| 2 | 3 | 81 | 1 | 6 | 1 |
| 3 | 4 | 52 | 3 | 14 | 3 |
| 4 | 5 | 57 | 12 | 15 | 8 |
| N/A | | N/A | N/A | N/A | N/A |
| | | | | | |
| | | | | | |

Project Year 1978-79

Site: TEXAS
School: Comparison

| SPRING 1978 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | - | N/A | N/A |
| 2 | 115 | 9 | 8% |
| 3 | 122 | 8 | 7% |
| 4 | 109 | 37 | 34% |
| 5 | 116 | 37 | 32% |
| TOTAL | 463 | 91 | 20% |
| | | | |

| SPRING 1978 TO SPRING 1979 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 78 | Grade Spr 79 | Total students tested at both points | No. >1 yr below grade Spr 78 | No. >1 yr below grade Spr 79 | No. >1 yr below grade at both points |
| N/A | | N/A | N/A | N/A | N/A |
| 2 | 2 | 6 | 3 | 0 | 0 |
| 2 | 3 | 70 | 4 | 6 | 2 |
| 3 | 3 | 7 | 3 | 1 | 1 |
| 3 | 4 | 84 | 2 | 19 | 2 |
| 4 | 4 | 3 | 3 | 3 | 3 |
| 4 | 5 | 74 | 23 | 30 | 19 |
| 5 | 5 | 4 | 4 | 3 | 3 |
| | | | | | |
| | | | | | |

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*Excluding students designated as having learning problems.

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## TABLE D.13

## FREQUENCY ANALYSIS OF STUDENTS MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION *

Site: TEXAS
School: Special Emphasis

| SPRING 1979 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 90 | N/A | N/A |
| 2 | 95 | 1 | 1% |
| 3 | 109 | 11 | 10% |
| 4 | 78 | 23 | 30% |
| 5 | 87 | 32 | 37% |
| TOTAL | 459 | 67 | 15% |
| | | | |

Site: TEXAS
School: Comparison

| SPRING 1979 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 114 | N/A | N/A |
| 2 | 142 | 9 | 6% |
| 3 | 114 | 10 | 9% |
| 4 | 112 | 30 | 27% |
| 5 | 104 | 45 | 43% |
| TOTAL | 586 | 94 | 16% |
| | | | |

*Excluding students designated as having learning problems.

## TABLE D.14

## FREQUENCY ANALYSIS OF STUDENTS MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION*

Project Year 1977-78

Site: WEST VIRGINIA
School: Special Emphasis

| SPRING 1977 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 52 | N/A | N/A |
| 2 | 52 | 10 | 19% |
| 3 | 50 | 13 | 26% |
| 4 | 59 | 23 | 39% |
| 5 | 51 | 35 | 69% |
| 6 | 61 | 36 | 59% |
| TOTAL | 325 | 117 | 36% |

| SPRING 1977 TO SPRING 1978 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 77 | Grade Spr 78 | Total students tested at both points | No. >1 yr below grade Spr 77 | No. >1 yr below grade Spr 78 | No. >1 yr below grade at both points |
| 1 | 2 | 44 | N/A | 3 | N/A |
| 2<br>2 | 2<br>3 | 1<br>43 | 0<br>8 | 0<br>6 | 0<br>6 |
| 3<br>3 | 3<br>4 | 1<br>38 | 0<br>5 | 0<br>12 | 0<br>5 |
| 4 | 5 | 52 | 18 | 25 | 14 |
| 5 | 6 | 44 | 29 | 16 | 16 |
| N/A | | N/A | N/A | N/A | N/A |
| | | | | | |

Project Year 1977-78

Site: WEST VIRGINIA
School: Comparison

| SPRING 1977 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 58 | N/A | N/A |
| 2 | 44 | 14 | 32% |
| 3 | 47 | 15 | 32% |
| 4 | 52 | 26 | 50% |
| 5 | 56 | 35 | 63% |
| 6 | 54 | 34 | 63% |
| TOTAL | 311 | 124 | 40% |

| SPRING 1977 TO SPRING 1978 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 77 | Grade Spr 78 | Total students tested at both points | No. >1 yr below grade Spr 77 | No. >1 yr below grade Spr 78 | No. >1 yr below grade at both points |
| 1 | 2 | 52 | N/A | 8 | N/A |
| 2 | 3 | 35 | 12 | 8 | 7 |
| 3 | 4 | 36 | 8 | 9 | 6 |
| 4<br>4 | 4<br>5 | 1<br>39 | 1<br>17 | 1<br>19 | 1<br>17 |
| 5 | 6 | 46 | 29 | 20 | 20 |
| N/A | | N/A | N/A | N/A | N/A |
| | | | | | |

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*Excluding students designated as having learning problems.

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## TABLE D.15

## FREQUENCY ANALYSIS OF STUDENTS MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION*

**Project Year 1978-79**

**Site: WEST VIRGINIA**
**School: Special Emphasis**

| SPRING 1978 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 72 | N/A | N/A |
| 2 | 55 | 3 | 6% |
| 3 | 50 | 10 | 20% |
| 4 | 46 | 15 | 33% |
| 5 | 61 | 31 | 51% |
| 6 | 57 | 21 | 37% |
| TOTAL | 341 | 80 | 24% |

| SPRING 1978 TO SPRING 1979 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 78 | Grade Spr 79 | Total students tested at both points | No. >1 yr below grade Spr 78 | No. >1 yr below grade Spr 79 | No. >1 yr below grade at both points |
| 1<br>1 | 1<br>2 | 1<br>68 | N/A<br>N/A | N/A<br>3 | N/A<br>N/A |
| 2 | 3 | 52 | 4 | 16 | 4 |
| 3 | 4 | 41 | 7 | 16 | 7 |
| 4 | 5 | 46 | 16 | 19 | 14 |
| 5 | 6 | 55 | 26 | 28 | 19 |
| N/A | | N/A | N/A | N/A | N/A |
| | | | | | |

**Project Year 1978-79**

**Site: WEST VIRGINIA**
**School: Comparison**

| SPRING 1978 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 55 | N/A | N/A |
| 2 | 67 | 15 | 22% |
| 3 | 47 | 12 | 26% |
| 4 | 43 | 11 | 26% |
| 5 | 54 | 30 | 56% |
| 6 | 61 | 30 | 49% |
| TOTAL | 327 | 98 | 30% |

| SPRING 1978 TO SPRING 1979 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 78 | Grade Spr 79 | Total students tested at both points | No. >1 yr below grade Spr 78 | No. >1 yr below grade Spr 79 | No. >1 yr below grade at both points |
| 1 | 2 | 48 | N/A | 9 | N/A |
| 2<br>2 | 2<br>3 | 10<br>40 | 0<br>9 | 0<br>16 | 0<br>7 |
| 3 | 4 | 40 | 10 | 21 | 10 |
| 4 | 5 | 38 | 13 | 17 | 11 |
| 5 | 6 | 35 | 18 | 18 | 17 |
| N/A | | N/A | N/A | N/A | N/A |
| | | | | | |

*Excluding students designated as having learning problems.

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## TABLE D.16

## FREQUENCY ANALYSIS OF STUDENTS MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION*

**Site:** WEST VIRGINIA
**School:** Special Emphasis

| SPRING 1979 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 72 | N/A | N/A |
| 2 | 79 | 4 | 5% |
| 3 | 59 | 22 | 37% |
| 4 | 55 | 23 | 42% |
| 5 | 58 | 27 | 47% |
| 6 | 68 | 38 | 56% |
| TOTAL | 391 | 114 | 29% |

**Site:** WEST VIRGINIA
**School:** Comparison

| SPRING 1979 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 35 | N/A | N/A |
| 2 | 66 | 14 | 21% |
| 3 | 48 | 19 | 40% |
| 4 | 48 | 24 | 50% |
| 5 | 52 | 27 | 52% |
| 6 | 44 | 23 | 52% |
| TOTAL | 293 | 107 | 37% |

*Excluding students designated as having learning problems.

# TABLE D.17

## FREQUENCY ANALYSIS OF STUDENTS MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION*

Project Year 1978-79

Site: CALIFORNIA
School: Special Emphasis

| SPRING 1978 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 36 | N/A | N/A |
| 2 | 39 | 2 | 5% |
| 3 | 29 | 3 | 10% |
| 4 | 29 | 6 | 21% |
| 5 | 32 | 19 | 59% |
| 6 | 30 | 17 | 57% |
| TOTAL | 195 | 47 | 24% |

| SPRING 1978 TO SPRING 1979 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 78 | Grade Spr 79 | Total students tested at both points | No. >1 yr below grade Spr 78 | No. >1 yr below grade Spr 79 | No. >1 yr below grade at both points |
| 1 | 2 | 25 | N/A | 1 | N/A |
| 2 | 3 | 29 | 1 | 5 | 1 |
| 3 | 4 | 21 | 2 | 14 | 2 |
| 4 | 5 | 22 | 4 | 9 | 4 |
| 5 | 6 | 19 | 10 | 8 | 8 |
| N/A | | N/A | N/A | N/A | N/A |
| | | | | | |

Project Year 1978-79

Site: CALIFORNIA
School: Comparison

| SPRING 1978 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 32 | N/A | N/A |
| 2 | 48 | 2 | 4% |
| 3 | 46 | 5 | 11% |
| 4 | 32 | 21 | 66% |
| 5 | 52 | 38 | 73% |
| 6 | 51 | 36 | 71% |
| TOTAL | 261 | 102 | 39% |

| SPRING 1978 TO SPRING 1979 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 78 | Grade Spr 79 | Total students tested at both points | No. >1 yr below grade Spr 78 | No. >1 yr below grade Spr 79 | No. >1 yr below grade at both points |
| 1 | 2 | 18 | N/A | 6 | N/A |
| 2 | 3 | 27 | 1 | 2 | 0 |
| 3 | 4 | 30 | 4 | 17 | 4 |
| 4 | 5 | 15 | 8 | 9 | 7 |
| 5<br>5 | 5<br>6 | 2<br>24 | 2<br>18 | 2<br>17 | 2<br>15 |
| N/A | | N/A | N/A | N/A | N/A |
| | | | | | |

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*Excluding students designated as having learning problems.

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## TABLE D.18

## FREQUENCY ANALYSIS OF STUDENTS MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION*

**Site:** CALIFORNIA
**School:** Special Emphasis

| SPRING 1979 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 34 | N/A | N/A |
| 2 | 37 | 1 | 3% |
| 3 | 39 | 8 | 21% |
| 4 | 38 | 23 | 61% |
| 5 | 31 | 14 | 45% |
| 6 | 33 | 13 | 39% |
| TOTAL | 212 | 59 | 28% |

**Site:** CALIFORNIA
**School:** Comparison

| SPRING 1979 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 10 | N/A | N/A |
| 2 | 36 | 11 | 31% |
| 3 | 64 | 23 | 36% |
| 4 | 48 | 23 | 48% |
| 5 | 44 | 30 | 68% |
| 6 | 43 | 34 | 79% |
| TOTAL | 245 | 121 | 49% |

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*Excluding students designated as having learning problems.

# APPENDIX E

# ANALYSIS OF COVARIANCE - WHOLE GRADE

## TABLE E.1

## IMPACT SUMMARY FOR PROJECT YEAR 1977-78
WHOLE GRADE

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: LOUISIANA

| ANCOVA | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 29 | 257 | 338 C | 366 | 9.28 | <0.01 | | 1.5 | 2.3 | + .8 |
| | Comparison | 85 | 298 | 351 C | 341 | | | | 1.9 | 2.4 | + .5 |
| 3 | Special Emphasis | 31 | 330 C | 422 | 443 | 0.71 | 0.40 | | 2.2 | 3.3 | +1.1 |
| | Comparison | 69 | 367 C | 447 C | 437 | | | | 2.6 | 3.8 | +1.2 |
| 4 | Special Emphasis | 37 | 411* | 442 C | 440 | 0.30 | 0.59 | | 3.2 | 3.7 | + .5 |
| | Comparison | 91 | 416* | 458 C | 435 | | | | 3.2 | 4.1 | + .9 |
| 5 | Special Emphasis | 39 | 467 C | 502 | 497 | 5.53 | 0.02 | | 4.3 | 5.4 | +1.1 |
| | Comparison | 82 | 461 C | 470 | 472 | | | | 4.2 | 4.4 | + .2 |
| 6 | Special Emphasis | 38 | 466 | 500 | 517 | 0.52 | 0.47 | | 4.3 | 5.3 | +1.0 |
| | Comparison | 68 | 493 | 519 | 509 | | | | 5.1 | 5.9 | + .8 |

*Pretest fall 1977.

C indicates that corresponding mean raw score above 70% correct (ceiling).

## TABLE E.2

## IMPACT SUMMARY FOR PROJECT YEAR 1978-79
## WHOLE GRADE

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: LOUISIANA

| ANCOVA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 27 | 258 | 346 C | 372 | 4.19 | 0.04 | 1.5 | 2.4 | + .9 |
| | Comparison | 90 | 311 | 364 C | 357 | | | 2.0 | 2.6 | + .6 |
| 3 | Special Emphasis | 34 | 343 C | 421 | 437 | 0.09 | 0.76 | 2.4 | 3.3 | + .9 |
| | Comparison | 64 | 370 C | 448 C | 440 | | | 2.6 | 3.8 | +1.2 |
| 4 | Special Emphasis | 30 | 428 | 465 C | 477 | 0.00 | 0.93 | 3.4 | 4.3 | + .9 |
| | Comparison | 70 | 446 C | 481 C | 476 | | | 3.8 | 4.7 | + .9 |
| 5 | Special Emphasis | 33 | 457 C | 490 | 494 | 6.78 | 0.01 | 4.1 | 5.0 | + .9 |
| | Comparison | 70 | 461 C | 464 | 464 | | | 4.2 | 4.3 | + .1 |
| 6 | Special Emphasis | 46 | 495 | 540 | 529 | 1.97 | 0.16 | 5.1 | 6.6 | +1.5 |
| | Comparison | 71 | 478 | 507 | 514 | | | 4.6 | 5.5 | + .9 |

C indicates that corresponding mean raw score above 70% correct (ceiling).

## TABLE E.3

## IMPACT SUMMARY FOR PROJECT YEAR 1977-79
## WHOLE GRADE

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site LOUISIANA

| | | ANCOVA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 3 | Special Emphasis | 30 | 236 | 419 | 452 | 6.18 | 0.02 | 1.5 | 3.3 | +1.8 |
| | Comparison | 61 | 307 | 443 C | 426 | | | 2.0 | 3.7 | +1.7 |
| 4 | Special Emphasis | 28 | 353 C | 471 C | 483 | 0.01 | 0.89 | 2.5 | 4.4 | +1.9 |
| | Comparison | 63 | 374 C | 486 C | 481 | | | 2.7 | 4.9 | +2.2 |
| 5 | Special Emphasis | | NO ANALYSIS POSSIBLE | | | | | | | |
| | Comparison | | | | | | | | | |
| 6 | Special Emphasis | 39 | 460 C | 531 | 537 | 6.03 | 0.02 | 4.1 | 6.3 | +2.2 |
| | Comparison | 84 | 467 C | 507 | 504 | | | 4.3 | 5.5 | +1.2 |

C indicates that corresponding mean raw score above 70% correct (ceiling).

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## TABLE E.4

## IMPACT SUMMARY FOR PROJECT YEAR 1977-78
## WHOLE GRADE

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: MICHIGAN

| | | ANCOVA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 82 | 299 | 352 C | 348 | 0.65 | 0.42 | 1.9 | 2.4 | + .5 |
| | Comparison | 61 | 288 | 340 C | 344 | | | 1.8 | 2.3 | + .5 |
| 3 | Special Emphasis | 86 | 345 C | 427 | 428 | 3.37 | 0.07 | 2.4 | 3.4 | +1.0 |
| | Comparison | 64 | 346 C | 419 | 419 | | | 2.4 | 3.3 | + .9 |
| 4 | Special Emphasis | 67 | 422 | 449 C | 456 | 0.06 | 0.80 | 3.3 | 3.9 | + .6 |
| | Comparison | 56 | 439 C | 463 C | 457 | | | 3.6 | 4.3 | + .7 |
| 5 | Special Emphasis | 69 | 456 C | 453 | 450 | 0.00 | 0.93 | 4.0 | 4.0 | 0 |
| | Comparison | 66 | 449 C | 446 | 449 | | | 3.9 | 3.8 | - .1 |
| 6 | Special Emphasis | 81 | 461 | 495 | 488 | 0.01 | 0.93 | 4.2 | 5.1 | + .9 |
| | Comparison | 60 | 443 | 479 | 488 | | | 3.7 | 4.7 | +1.0 |

C indicates that corresponding mean raw score above 70% correct (ceiling).

## TABLE E.5

## IMPACT SUMMARY FOR PROJECT YEAR 1978-79
## WHOLE GRADE

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: MICHIGAN

| ANCOVA | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 82 | 290 | 362 C | 360 | 1.04 | 0.31 | | 1.8 | 2.6 | + .8 |
| | Comparison | 65 | 283 | 353 C | 355 | | | | 1.8 | 2.5 | + .7 |
| 3 | Special Emphasis | 95 | 350 C | 429 C | 426 | 5.82 | 0.02 | | 2.4 | 3.4 | +1.0 |
| | Comparison | 71 | 342 C | 435 C | 439 | | | | 2.3 | 3.6 | +1.3 |
| 4 | Special Emphasis | 82 | 431 | 463 C | 459 | 0.99 | 0.32 | | 3.5 | 4.2 | + .7 |
| | Comparison | 66 | 422 | 448 C | 454 | | | | 3.3 | 3.8 | + .5 |
| 5 | Special Emphasis | 79 | 448 C | 447 | 453 | 6.40 | 0.01 | | 3.8 | 3.8 | 0 |
| | Comparison | 65 | 460 C | 481 | 473 | | | | 4.1 | 4.7 | + .6 |

C indicates that corresponding mean raw score above 70% correct (ceiling).

## TABLE E.6

## IMPACT SUMMARY FOR PROJECT YEAR 1977-79
## WHOLE GRADE

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: MICHIGAN

**ANCOVA**

| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F |
|---|---|---|---|---|---|---|---|
| 3 | Special Emphasis | 74 | 297 | 430 C | 429 | 2.08 | 0.15 |
|  | Comparison | 52 | 292 | 436 C | 438 |  |  |
| 4 | Special Emphasis | 77 | 348 C | 460 C | 461 | 3.02 | 0.09 |
|  | Comparison | 53 | 350 C | 450 C | 448 |  |  |
| 5 | Special Emphasis | 63 | 418 | 448 | 458 | 2.14 | 0.15 |
|  | Comparison | 60 | 435 C | 472 | 472 |  |  |

| Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
|---|---|---|
| 1.9 | 3.5 | +1.6 |
| 1.8 | 3.6 | +1.8 |
| 2.4 | 4.1 | +1.7 |
| 2.4 | 3.9 | +1.5 |
| 3.3 | 3.9 | +.6 |
| 3.6 | 4.5 | +.9 |

C indicates that corresponding mean raw score above 70% correct (ceiling).

## TABLE E.7

## IMPACT SUMMARY FOR PROJECT YEAR 1977-78
## WHOLE GRADE

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: OHIO

| ANCOVA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 37 | 313 | 371 C | 360 | 0.02 | 0.90 | 2.1 | 2.7 | + .6 |
| | Comparison | 41 | 290 | 351 C | 361 | | | 1.8 | 2.4 | + .6 |
| 3 | Special Emphasis | 29 | 345 C | 435 C | 440 | 1.21 | 0.28 | 2.4 | 3.6 | +1.2 |
| | Comparison | 33 | 356 C | 452 C | 448 | | | 2.5 | 3.9 | +1.4 |
| 4 | Special Emphasis | 39 | 431 | 449 C | 453 | 0.48 | 0.49 | 3.5 | 3.9 | + .4 |
| | Comparison | 18 | 445 C | 467 C | 460 | | | 3.8 | 4.3 | + .5 |
| 5 | Special Emphasis | 35 | 466 C | 460 | 457 | 2.08 | 0.15 | 4.3 | 4.1 | - .2 |
| | Comparison | 29 | 459 C | 476 | 482 | | | 4.1 | 4.6 | - .5 |
| 6 | Special Emphasis | 35 | 521 | 573 C | 544 | 0.00 | 0.93 | 6.0 | 7.6 | +1.6 |
| | Comparison | 24 | 456 | 502 | 545 | | | 4.0 | 5.4 | +1.4 |

C indicates that corresponding mean raw score above 70% correct (ceiling).

# TABLE E.8

## IMPACT SUMMARY FOR PROJECT YEAR 1977-78
## WHOLE GRADE

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: TENNESSEE

| ANCOVA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 33 | 270 | 342 C | 344 | 0.17 | 0.68 | 1.6 | 2.3 | +.7 |
| | Comparison | 23 | 279 | 351 C | 348 | | | 1.7 | 2.4 | +.7 |
| 3 | Special Emphasis | 41 | 337 C | 437 C | 451 | 3.06 | 0.09 | 2.3 | 3.6 | +1.3 |
| | Comparison | 23 | 371 C | 459 C | 434 | | | 2.7 | 4.1 | +1.4 |
| 4 | Special Emphasis | 31 | 418 C | 453 C | 459 | 3.55 | 0.07 | 3.3 | 4.0 | +.7 |
| | Comparison | 16 | 443 C | 493 C | 481 | | | 3.7 | 5.1 | +1.4 |
| 5 | Special Emphasis | 45 | 452 C | 469 | 477 | 0.48 | 0.49 | 3.9 | 4.4 | +.5 |
| | Comparison | 14 | 488 | 513 | 488 | | | 4.9 | 5.7 | +.8 |
| 6 | Special Emphasis | 47 | 483 | 513 | 504 | 3.48 | 0.07 | 4.8 | 5.7 | +.9 |
| | Comparison | 20 | 452 | 508 | 531 | | | 3.9 | 5.6 | 1.7 |

C indicates that corresponding mean raw score above 70% correct (ceiling).

## TABLE E.9

## IMPACT SUMMARY FOR PROJECT YEAR 1978-79
## WHOLE GRADE

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: TENNESSEE

| ANCOVA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 36 | 313 | 393 C | 394 | 0.27 | 0.60 | 2.1 | 2.9 | +.8 |
| | Comparison | 17 | 318 | 391 C | 389 | | | 2.1 | 2.9 | +.8 |
| 3 | Special Emphasis | 36 | 352 C | 427 | 428 | 3.78 | 0.06 | 2.4 | 3.4 | +1.0 |
| | Comparison | 21 | 357 C | 449 C | 446 | | | 2.5 | 3.8 | +1.3 |
| 4 | Special Emphasis | 42 | 458 C | 489 C | 489 | 0.85 | 0.36 | 4.1 | 5.0 | +.9 |
| | Comparison | 23 | 459 C | 498 C | 497 | | | 4.1 | 5.2 | +1.1 |
| 5 | Special Emphasis | 28 | 457 C | 463 | 480 | 0.97 | 0.33 | 4.1 | 4.2 | +.1 |
| | Comparison | 21 | 499 C | 519 | 496 | | | 5.3 | 5.9 | +.6 |
| 6 | Special Emphasis | 17 | 498 | 530 | 524 | 2.52 | 0.12 | 5.2 | 6.3 | +1.1 |
| | Comparison | 18 | 487 | 543 | 549 | | | 4.9 | 6.7 | +1.8 |

C indicates that corresponding mean raw score above 70% correct (ceiling).

## TABLE E.10

## IMPACT SUMMARY FOR PROJECT YEAR 1977-79
## WHOLE GRADE

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: TENNESSEE

| ANCOVA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 3 | Special Emphasis | 32 | 272 | 423 | 424 | 4.38 | 0.12 | 1.6 | 3.3 | +1.7 |
| | Comparison | 19 | 280 | 444 C | 442 | | | 1.7 | 3.7 | +2.0 |
| 4 | Special Emphasis | 38 | 351 C | 476 C | 481 | 0.04 | 0.83 | 2.4 | 4.6 | +2.2 |
| | Comparison | 20 | 367 C | 493 C | 484 | | | 2.6 | 5.1 | +2.5 |
| 5 | Special Emphasis | 27 | 424 | 460 | 469 | 3.41 | 0.07 | 3.4 | 4.1 | +.7 |
| | Comparison | 15 | 447 C | 516 | 499 | | | 3.8 | 5.8 | +2.0 |
| 6 | Special Emphasis | 17 | 466 C | 522 | 527 | 1.04 | 0.32 | 4.3 | 6.0 | +1.7 |
| | Comparison | 15 | 476 C | 534 | 549 | | | 4.6 | 7.0 | +2.4 |

C indicates that corresponding mean raw score above 70% correct (ceiling).

## TABLE E.11

## IMPACT SUMMARY FOR PROJECT YEAR 1977-78
## WHOLE GRADE

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

**Site:** TEXAS

| ANCOVA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 89 | 302 | 370 C | 374 | 16.0 | <0.01 | 1.9 | 2.6 | + .7 |
| | Comparison | 72 | 312 | 360 C | 355 | | | 2.0 | 2.5 | + .5 |
| 3 | Special Emphasis | 65 | 371 C | 448 C | 452 | 2.30 | 0.13 | 2.7 | 3.8 | +1.1 |
| | Comparison | 92 | 380 C | 463 C | 460 | | | 2.8 | 4.2 | +1.4 |
| 4 | Special Emphasis | 61 | 467 C | 495 C | 488 | 0.02 | 0.88 | 4.3 | 5.1 | + .8 |
| | Comparison | 79 | 450 C | 483 C | 489 | | | 3.9 | 4.8 | + .9 |
| 5 | Special Emphasis | 65 | 503 | 522 | 519 | 0.98 | 0.33 | 5.4 | 6.0 | + .6 |
| | Comparison | 91 | 497 | 525 | 528 | | | 5.2 | 6.1 | + .9 |

C indicates that corresponding mean raw score above 70% correct (ceiling).

# TABLE E.12

## IMPACT SUMMARY FOR PROJECT YEAR 1978-79
## WHOLE GRADE

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

| ANCOVA | | | | | | | |
|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F |
| 2 | Special Emphasis | 75 | 320* | 374 C | 378 | 10.82 | <0.01 |
| | Comparison | 103 | 328 C | 367 C | 365 | | |
| 3 | Special Emphasis | 81 | 374 C | 457 C | 457 | .016 | 0.90 |
| | Comparison | 77 | 374 C | 457 C | 456 | | |
| 4 | Special Emphasis | 55 | 447 C | 485 C | 497 | 1.60 | 0.21 |
| | Comparison | 88 | 468 C | 496 C | 489 | | |
| 5 | Special Emphasis | 57 | 495 C | 546 | 540 | 8.00 | <0.01 |
| | Comparison | 78 | 483 C | 503 | 508 | | |

| Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
|---|---|---|
| 2.1 | 2.7 | + 0.6 |
| 2.2 | 2.6 | + 0.4 |
| 2.7 | 4.1 | + 1.4 |
| 2.7 | 4.1 | + 1.4 |
| 3.8 | 4.8 | + 1.0 |
| 4.4 | 5.2 | + .8 |
| 5.1 | 6.8 | + 1.7 |
| 4.8 | 5.4 | + .6 |

*Pretest fall 1978.

C indicates that corresponding mean raw score above 70% correct (ceiling).

## TABLE E.13

## IMPACT SUMMARY FOR PROJECT YEAR 1977-79
## WHOLE GRADE

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: TEXAS

| ANCOVA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 3 | Special Emphasis | 69 | 305 | 455 C | 460 | 2.74 | 0.10 | 2.0 | 4.0 | +2.0 |
| | Comparison | 55 | 316 | 454 C | 448 | | | 2.1 | 4.0 | +1.9 |
| 4 | Special Emphasis | 47 | 372 C | 488 C | 494 | 0.48 | 0.49 | 2.7 | 4.8 | +2.1 |
| | Comparison | 72 | 383 C | 491 C | 488 | | | 2.8 | 5.0 | +2.2 |
| 5 | Special Emphasis | 48 | 473 C | 555 | 540 | 5.56 | 0.02 | 4.5 | 7.0 | +2.5 |
| | Comparison | 62 | 452 C | 500 | 512 | | | 3.9 | 5.3 | +1.4 |

C indicates that corresponding mean raw score above 70% correct(ceiling).

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## TABLE E.14

## IMPACT SUMMARY FOR PROJECT YEAR 1977-78
## WHOLE GRADE

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: WEST VIRGINIA

| ANCOVA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 45 | 273 | 357 C | 359 | .089 | 0.77 | 1.7 | 2.5 | + .8 |
| | Comparison | 52 | 278 | 357 C | 356 | | | 1.7 | 2.5 | + .8 |
| 3 | Special Emphasis | 44 | 349 C | 456 C | 449 | 2.20 | 0.14 | 2.4 | 4.0 | +1.6 |
| | Comparison | 35 | 331 C | 454 C | 463 | | | 2.2 | 4.0 | +1.8 |
| 4 | Special Emphasis | 38 | 456 C | 488 C | 480 | 7.50 | <0.01 | 4.0 | 4.9 | + .9 |
| | Comparison | 37 | 436 | 505 C | 513 | | | 3.6 | 5.5 | +1.9 |
| 5 | Special Emphasis | 52 | 472 C | 489 | 488 | 6.85 | 0.01 | 4.5 | 5.0 | + .5 |
| | Comparison | 39 | 469 C | 515 | 517 | | | 4.4 | 5.8 | +1.4 |
| 6 | Special Emphasis | 45 | 470 | 553 C | 558 | 2.06 | 0.16 | 4.4 | 7.0 | +2.6 |
| | Comparison | 46 | 482 | 546 | 541 | | | 4.7 | 6.8 | +2.1 |

C indicates that corresponding mean raw score above 70% correct (ceiling).

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## TABLE E.15

## IMPACT SUMMARY FOR PROJECT YEAR 1978-79
## WHOLE GRADE

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: WEST VIRGINIA

| ANCOVA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 68 | 301 | 360 C | 359 | 8.52 | 0.01 | 1.9 | 2.5 | + .6 |
| | Comparison | 58 | 299 | 379 C | 380 | | | 1.9 | 2.7 | + .8 |
| 3 | Special Emphasis | 52 | 355 C | 435 C | 430 | 0.35 | 0.55 | 2.5 | 3.6 | +1.1 |
| | Comparison | 40 | 337 C | 415 | 422 | | | 2.3 | 3.2 | + .9 |
| 4 | Special Emphasis | 42 | 448 C | 494 C | 495 | 17.2 | < 0.01 | 3.8 | 5.1 | +1.1 |
| | Comparison | 40 | 450 | 455 C | 454 | | | 3.9 | 4.0 | + .1 |
| 5 | Special Emphasis | 47 | 484 C | 518 C | 521 | <0.01 | 0.99 | 4.8 | 5.9 | +1.1 |
| | Comparison | 38 | 491 C | 526 | 521 | | | 5.0 | 6.1 | +1.1 |
| 6 | Special Emphasis | 55 | 490 | 518 | 528 | 3.40 | 0.07 | 5.0 | 5.9 | + .9 |
| | Comparison | 35 | 516 | 526 | 510 | | | 5.8 | 6.1 | + .3 |

C indicates that corresponding mean raw score above 70% correct (ceiling).

# TABLE E.16

# IMPACT SUMMARY FOR PROJECT YEAR 1977-79
# WHOLE GRADE

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: WEST VIRGINIA

| ANCOVA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 3 | Special Emphasis | 44 | 275 | 437 C | 432 | 0.59 | 0.44 | 1.7 | 3.6 | +1.9 |
| | Comparison | 37 | 263 | 417 | 423 | | | 1.6 | 3.2 | +1.6 |
| 4 | Special Emphasis | 41 | 344 C | 494 C | 487 | 4.52 | 0.04 | 2.4 | 5.1 | +2.7 |
| | Comparison | 37 | 328 | 454 C | 462 | | | 2.2 | 4.0 | +1.8 |
| 5 | Special Emphasis | 43 | 446 C | 508 C | 497 | 4.60 | 0.04 | 3.8 | 5.6 | +1.8 |
| | Comparison | 41 | 430 | 513 | 524 | | | 3.5 | 5.7 | +2.2 |
| 6 | Special Emphasis | 53 | 472 C | 515 | 511 | 1.63 | 0.20 | 4.5 | 5.8 | +1.3 |
| | Comparison | 36 | 463 C | 521 | 527 | | | 4.2 | 6.0 | +1.8 |

C indicates that corresponding mean raw score above 70% correct (ceiling).

## TABLE E.17

## IMPACT SUMMARY FOR PROJECT YEAR 1977-78
## WHOLE GRADE

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: CALIFORNIA

| ANCOVA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score * | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 36 | 322 | 371 C | 373 | 0.14 | 0.71 | 2.1 | 2.7 | + .6 |
| | Comparison | 36 | 327 C | 373 C | 371 | | | 2.2 | 2.7 | + .5 |
| 3 | Special Emphasis | 27 | 420 | 439 C | 432 | 0.15 | 0.70 | 3.3 | 3.6 | + .3 |
| | Comparison | 39 | 399 | 423 C | 428 | | | 3.0 | 3.3 | + .3 |
| 4 | Special Emphasis | 29 | 458 C | 488 C | 481 | 12.5 | <0.01 | 4.1 | 4.9 | + .8 |
| | Comparison | 24 | 429 | 442 C | 451 | | | 3.4 | 3.7 | + .3 |
| 5 | Special Emphasis | 27 | 457 | 482 | 459 | 0.17 | 0.69 | 4.1 | 4.8 | + .7 |
| | Comparison | 46 | 414 | 439 | 453 | | | 3.2 | 3.6 | + .4 |
| 6 | Special Emphasis | 29 | 487 | 525 | 507 | 0.92 | 0.34 | 4.9 | 6.1 | +1.2 |
| | Comparison | 42 | 450 | 506 | 518 | | | 3.9 | 5.5 | +1.6 |

*Pretest fall 1977.

C indicates that corresponding mean raw score above 70% correct (ceiling).

## TABLE E.18

## IMPACT SUMMARY FOR PROJECT YEAR 1978-79
## WHOLE GRADE

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: CALIFORNIA

| ANCOVA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 25 | 329 C | 389 C | 366 | 3.54 | 0.07 | 2.2 | 2.9 | + .7 |
| | Comparison | 18 | 268 | 310 | 342 | | | 1.6 | 2.0 | + .4 |
| 3 | Special Emphasis | 30 | 369 C | 422 | 420 | 15.4 | <0.01 | 2.6 | 3.3 | + .7 |
| | Comparison | 27 | 365 C | 452 C | 454 | | | 2.6 | 3.9 | +1.3 |
| 4 | Special Emphasis | 22 | 440 C | 459 C | 451 | 0.11 | 0.75 | 3.7 | 4.1 | + .4 |
| | Comparison | 30 | 419 C | 449 C | 455 | | | 3.3 | 3.9 | + .6 |
| 5 | Special Emphasis | 22 | 489 C | 517 | 496 | 0.08 | 0.77 | 5.0 | 5.9 | + .9 |
| | Comparison | 17 | 437 C | 464 | 491 | | | 3.6 | 4.2 | + .6 |
| 6 | Special Emphasis | 19 | 491 | 560 | 534 | 1.79 | 0.19 | 5.0 | 7.2 | +2.2 |
| | Comparison | 24 | 435 | 482 | 504 | | | 3.6 | 4.8 | +1.2 |

C indicates that corresponding mean raw score above 70% correct (ceiling).

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# APPENDIX F

# ANALYSIS OF COVARIANCE - BELOW MEAN

# TABLE F.1

## IMPACT SUMMARY FOR PROJECT YEAR 1977-78
## STUDENTS BELOW GRADE MEAN

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: LOUISIANA

| ANCOVA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 13 | 230 | 326 | 368 | 19.2 | <0.01 | 1.2 | 2.2 | +1.0 |
| | Comparison | 43 | 273 | 325 | 312 | | | 1.7 | 2.2 | + .5 |
| 3 | Special Emphasis | 13 | 294 | 379 | 403 | 0.51 | 0.48 | 1.9 | 2.7 | + .8 |
| | Comparison | 37 | 331 | 418 | 409 | | | 2.2 | 3.2 | +1.0 |
| 4 | Special Emphasis | 19 | 377* | 413 | 414 | 0.13 | 0.71 | 2.7* | 3.2 | + .5 |
| | Comparison | 51 | 379* | 419 | 418 | | | 2.7* | 3.3 | + .6 |
| 5 | Special Emphasis | 21 | 429 | 455 | 446 | 2.34 | 0.13 | 3.4 | 4.0 | + .6 |
| | Comparison | 46 | 418 | 423 | 427 | | | 3.3 | 3.3 | 0 |
| 6 | Special Emphasis | 21 | 428 | 473 | 482 | 2.85 | 0.10 | 3.4 | 4.5 | +1.1 |
| | Comparison | 41 | 441 | 462 | 458 | | | 3.7 | 4.2 | + .5 |

*Pretest Fall '77.

## TABLE F.2

## IMPACT SUMMARY FOR PROJECT YEAR 1978-79
## STUDENTS BELOW GRADE MEAN

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: LOUISIANA

| ANCOVA | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 12 | 203 | 322 C | 361 | 6.05 | 0.02 | <1.0 | 2.1 | >+2.1 |
| | Comparison | 40 | 284 | 339 C | 327 | | | 1.8 | 2.3 | + .5 |
| 3 | Special Emphasis | 18 | 321 C | 411 C | 427 | 2.39 | 0.13 | 2.1 | 3.2 | +1.1 |
| | Comparison | 31 | 341 C | 418 C | 409 | | | 2.3 | 3.2 | + .9 |
| 4 | Special Emphasis | 15 | 402 | 451 | 459 | 4.01 | 0.05 | 3.0 | 3.9 | + .9 |
| | Comparison | 34 | 410 C | 442 | 439 | | | 3.1 | 3.7 | + .6 |
| 5 | Special Emphasis | 18 | 421 C | 442 | 438 | 7.51 | <0.01 | 3.3 | 3.7 | + .4 |
| | Comparison | 37 | 410 C | 414 | 415 | | | 3.1 | 3.2 | + .1 |
| 6 | Special Emphasis | 26 | 432 | 474 | 470 | 7.07 | 0.01 | 3.5 | 4.5 | +1.0 |
| | Comparison | 40 | 421 | 439 | 441 | | | 3.3 | 3.6 | + .3 |

## TABLE F.3

## IMPACT SUMMARY FOR PROJECT YEAR 1977-78
## STUDENTS BELOW GRADE MEAN

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: MICHIGAN

| ANCOVA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 39 | 271 | 328 | 326 | 1.59 | 0.21 | 1.6 | 2.2 | + .6 |
| | Comparison | 31 | 261 | 314 | 317 | | | 1.5 | 2.1 | + .6 |
| 3 | Special Emphasis | 46 | 314 | 394 | 394 | 5.57 | 0.02 | 2.1 | 2.9 | + .8 |
| | Comparison | 31 | 313 | 405 | 406 | | | 2.1 | 3.1 | +1.0 |
| 4 | Special Emphasis | 37 | 394 | 423 | 427 | 0.00 | 0.95 | 2.9 | 3.3 | + .4 |
| | Comparison | 28 | 403 | 432 | 427 | | | 3.0 | 3.5 | + .5 |
| 5 | Special Emphasis | 40 | 416 | 412 | 410 | 0.06 | 0.80 | 3.2 | 3.2 | 0 |
| | Comparison | 32 | 411 | 410 | 412 | | | 3.2 | 3.1 | + .1 |
| 6 | Special Emphasis | 41 | 413 | 451 | 447 | 0.74 | 0.39 | 3.2 | 3.9 | + .7 |
| | Comparison | 29 | 391 | 430 | 435 | | | 2.9 | 3.5 | + .6 |

## TABLE F.4

## IMPACT SUMMARY FOR PROJECT YEAR 1978-79
## STUDENTS BELOW GRADE MEAN

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: MICHIGAN

| ANCOVA | | | | | | | |
|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F |
| 2 | Special Emphasis | 40 | 261 | 348 | 348 | 2.52 | 0.12 |
| | Comparison | 26 | 243 | 334 | 334 | | |
| 3 | Special Emphasis | 52 | 324 | 410 | 406 | 2.18 | 0.14 |
| | Comparison | 40 | 315 | 410 | 415 | | |
| 4 | Special Emphasis | 45 | 396 | 422 | 423 | 0.01 | 0.91 |
| | Comparison | 34 | 399 | 425 | 423 | | |
| 5 | Special Emphasis | 42 | 414 | 406 | 410 | 4.44 | 0.04 |
| | Comparison | 35 | 422 | 438 | 433 | | |

| Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
|---|---|---|
| 1.5 | 2.4 | + .9 |
| 1.4 | 2.3 | + .9 |
| 2.2 | 3.1 | + .9 |
| 2.1 | 3.1 | +1.0 |
| 3.0 | 3.3 | + .3 |
| 3.0 | 3.4 | + .4 |
| 3.2 | 3.1 | - .1 |
| 3.3 | 3.6 | + .3 |

## TABLE F.5

## IMPACT SUMMARY FOR PROJECT YEAR 1977-78
## STUDENTS BELOW GRADE MEAN

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: OHIO

| ANCOVA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Grade** | **Treatment** | **No. of Students** | **Mean Pretest Scaled Score** | **Unadjusted Mean Posttest Scaled Score** | **Adjusted Mean Posttest Scaled Score** | **F Value** | **Significance of F** | **Grade Equivalent of Mean Pretest** | **Grade Equivalent of Mean Posttest** | **Change in Grade Equivalent** |
| 2 | **Special Emphasis** | 20 | 282 | 336 | 329 | 0.22 | 0.64 | 1.7 | 2.3 | + .6 |
| | **Comparison** | 21 | 264 | 318 | 325 | | | 1.6 | 2.1 | + .5 |
| 3 | **Special Emphasis** | 17 | 320 | 418 | 417 | 1.00 | 0.33 | 2.1 | 3.3 | +1.2 |
| | **Comparison** | 14 | 316 | 406 | 408 | | | 2.1 | 3.1 | +1.0 |
| 4 | **Special Emphasis** | 19 | 390 | 410 | 418 | 0.00 | 0.97 | 2.9 | 3.1 | + .2 |
| | **Comparison** | 9 | 414 | 434 | 418 | | | 3.2 | 3.5 | + .3 |
| 5 | **Special Emphasis** | 20 | 434 | 415 | 411 | 1.93 | 0.17 | 3.5 | 3.2 | - .3 |
| | **Comparison** | 16 | 424 | 436 | 441 | | | 3.4 | 3.6 | + .2 |
| 6 | **Special Emphasis** | 18 | 464 | 516 | 502 | 4.52 | 0.04 | 4.2 | 5.8 | +1.6 |
| | **Comparison** | 14 | 415 | 447 | 465 | | | 3.2 | 3.8 | + .6 |

## TABLE F.6

## IMPACT SUMMARY FOR PROJECT YEAR 1977-78
## STUDENTS BELOW GRADE MEAN

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: TENNESSEE

| ANCOVA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 17 | 243 | 322 | 323 | 0.71 | 0.41 | 1.3 | 2.1 | + .8 |
| | Comparison | 11 | 244 | 333 | 333 | | | 1.4 | 2.3 | + .9 |
| 3 | Special Emphasis | 21 | 304 | 393 | 418 | 0.77 | 0.39 | 2.0 | 2.9 | + .9 |
| | Comparison | 14 | 346 | 444 | 405 | | | 2.4 | 3.7 | +1.3 |
| 4 | Special Emphasis | 18 | 384 | 430 | 432 | 3.96 | 0.06 | 2.8 | 3.4 | + .6 |
| | Comparison | 7 | 400 | 467 | 460 | | | 3.0 | 4.3 | +1.3 |
| 5 | Special Emphasis | 23 | 407 | 432 | 438 | 0.36 | 0.55 | 3.1 | 3.5 | + .4 |
| | Comparison | 8 | 444 | 468 | 449 | | | 3.7 | 4.4 | + .7 |
| 6 | Special Emphasis | 27 | 419 | 449 | 443 | 0.97 | 0.33 | 3.3 | 3.9 | + .6 |
| | Comparison | 10 | 380 | 446 | 462 | | | 2.8 | 3.8 | +1.0 |

## TABLE F.7

## IMPACT SUMMARY FOR PROJECT YEAR 1978-79
## STUDENTS BELOW GRADE MEAN

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: TENNESSEE

| ANCOVA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 16 | 277 | 365 | 366 | 0.04 | 0.84 | 1.7 | 2.6 | + .9 |
| | Comparison | 10 | 286 | 371 | 369 | | | 1.8 | 2.7 | + .9 |
| 3 | Special Emphasis | 18 | 321 | 401 | 405 | 2.76 | 0.11 | 2.1 | 3.0 | + .9 |
| | Comparison | 12 | 333 | 432 | 425 | | | 2.3 | 3.5 | +1.2 |
| 4 | Special Emphasis | 25 | 418 | 455 | 458 | 0.35 | 0.56 | 3.3 | 4.0 | + .7 |
| | Comparison | 14 | 430 | 470 | 464 | | | 3.5 | 4.4 | + .9 |
| 5 | Special Emphasis | 15 | 420 | 429 | 455 | 0.17 | 0.68 | 3.3 | 3.4 | + .1 |
| | Comparison | 12 | 461 | 479 | 446 | | | 4.2 | 4.7 | + .5 |
| 6 | Special Emphasis | 8 | 440 | 480 | 476 | 0.03 | 0.87 | 3.7 | 4.7 | +1.0 |
| | Comparison | 11 | 432 | 477 | 480 | | | 3.5 | 4.6 | +1.1 |

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# TABLE F.8

## IMPACT SUMMARY FOR PROJECT YEAR 1977-78
## STUDENTS BELOW GRADE MEAN

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: TEXAS

| ANCOVA | | | | | | | |
|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F |
| 2 | Special Emphasis | 42 | 265 | 334 | 339 | 4.45 | 0.04 |
| | Comparison | 37 | 278 | 332 | 326 | | |
| 3 | Special Emphasis | 33 | 333 | 419 | 427 | 0.45 | 0.52 |
| | Comparison | 49 | 348 | 436 | 431 | | |
| 4 | Special Emphasis | 34 | 430 | 460 | 452 | 1.86 | 0.18 |
| | Comparison | 47 | 416 | 458 | 464 | | |
| 5 | Special Emphasis | 33 | 456 | 483 | 484 | 0.02 | 0.87 |
| | Comparison | 49 | 456 | 482 | 482 | | |

| Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
|---|---|---|
| 1.6 | 2.3 | + .7 |
| 1.7 | 2.2 | + .5 |
| 2.3 | 3.3 | +1.0 |
| 2.4 | 3.6 | +1.2 |
| 3.4 | 4.1 | + .7 |
| 3.2 | 4.1 | + .9 |
| 4.0 | 4.8 | + .8 |
| 4.0 | 4.8 | + .8 |

## TABLE F.9

## IMPACT SUMMARY FOR PROJECT YEAR 1978-79
## STUDENTS BELOW GRADE MEAN

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** [illegible] Comprehension Total Pretest [illegible] Score

Site: TEXAS

| ANCOVA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 40 | 285 | 350 | 354 | 14.6 | <0.01 | 1.8 | 2.4 | + .6 |
| | Comparison | 55 | 296 | 339 | 335 | | | 1.9 | 2.3 | + .4 |
| 3 | Special Emphasis | 40 | 339 | 436 | 428 | 0.02 | 0.88 | 2.3 | 3.4 | +1.1 |
| | Comparison | 41 | 342 | 430 | 429 | | | 2.3 | 3.5 | +1.2 |
| 4 | Special Emphasis | 28 | 417 | 454 | 461 | 1.04 | 0.31 | 3.2 | 4.0 | + .8 |
| | Comparison | 46 | 434 | 461 | 456 | | | 3.5 | 4.2 | + .7 |
| 5 | Special Emphasis | 28 | 448 | 490 | 485 | 2.99 | 0.09 | 3.8 | 5.0 | +1.2 |
| | Comparison | 41 | 440 | 455 | 459 | | | 3.7 | 4.0 | + .3 |

## TABLE F.10

## IMPACT SUMMARY FOR PROJECT YEAR 1977-78
## STUDENTS BELOW GRADE MEAN

| | |
|---|---|
| **DEPENDENT VARIABLE:** | **SDRT Comprehension Total Posttest Scaled Score** |
| **INDEPENDENT VARIABLE:** | **Treatment** |
| **COVARIATE:** | **SDRT Comprehension Total Pretest Scaled Score** |

**Site:** **WEST VIRGINIA**

| **ANCOVA** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Grade** | **Treatment** | **No. of Students** | **Mean Pretest Scaled Score** | **Unadjusted Mean Posttest Scaled Score** | **Adjusted Mean Posttest Scaled Score** | **F Value** | **Significance of F** |
| 2 | **Special Emphasis** | 20 | 229 | 335 | 338 | 0.27 | 0.60 |
| | **Comparison** | 30 | 246 | 331 | 329 | | |
| 3 | **Special Emphasis** | 25 | 316 | 435 | 425 | 1.11 | 0.30 |
| | **Comparison** | 20 | 282 | 400 | 412 | | |
| 4 | **Special Emphasis** | 21 | 409 | 447 | 433 | 5.04 | 0.03 |
| | **Comparison** | 19 | 378 | 456 | 471 | | |
| 5 | **Special Emphasis** | 30 | 426 | 456 | 447 | 0.02 | 0.89 |
| | **Comparison** | 19 | 400 | 430 | 445 | | |
| 6 | **Special Emphasis** | 20 | 417 | 513 | 518 | 5.12 | 0.02 |
| | **Comparison** | 27 | 429 | 486 | 482 | | |

| **Grade Equivalent of Mean Pretest** | **Grade Equivalent of Mean Posttest** | **Change in Grade Equivalent** |
|---|---|---|
| 1.2 | 2.3 | +1.1 |
| 1.4 | 2.2 | + .8 |
| 2.1 | 3.6 | +1.5 |
| 1.7 | 3.0 | +1.3 |
| 3.1 | 3.8 | + .7 |
| 2.7 | 4.0 | +1.3 |
| 3.4 | 4.0 | + .6 |
| 3.0 | 3.4 | + .4 |
| 3.2 | 5.7 | +2.5 |
| 3.4 | 4.9 | +1.5 |

# TABLE F.11

## IMPACT SUMMARY FOR PROJECT YEAR 1978-79
## STUDENTS BELOW GRADE MEAN

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: WEST VIRGINIA

| ANCOVA | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 30 | 264 | 338 | 335 | 0.52 | 0.47 | 1.6 | 2.3 | + .7 |
| | Comparison | 34 | 255 | 341 | 343 | | | 1.5 | 2.3 | + .8 |
| 3 | Special Emphasis | 27 | 327 | 389 | 372 | 12.3 | <0.01 | 2.2 | 2.9 | + .7 |
| | Comparison | 25 | 297 | 404 | 422 | | | 1.9 | 3.1 | +1.2 |
| 4 | Special Emphasis | 22 | 409 | 459 | 450 | 9.82 | <0.01 | 3.1 | 4.1 | +1.0 |
| | Comparison | 23 | 392 | 403 | 412 | | | 2.9 | 3.0 | + .1 |
| 5 | Special Emphasis | 26 | 439 | 466 | 457 | 0.59 | 0.45 | 3.6 | 4.3 | + .7 |
| | Comparison | 19 | 422 | 457 | 470 | | | 3.3 | 4.1 | + .8 |
| 6 | Special Emphasis | 29 | 446 | 490 | 488 | 10.1 | <0.01 | 3.8 | 5.0 | +1.2 |
| | Comparison | 22 | 440 | 446 | 449 | | | 3.7 | 3.8 | + .1 |

## TABLE F.12

## IMPACT SUMMARY FOR PROJECT YEAR 1977-78
## STUDENTS BELOW GRADE MEAN

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: CALIFORNIA

| ANCOVA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 17 | 280 | 336 | 344 | 0.08 | 0.77 | 1.7 | 2.3 | + .6 |
| | Comparison | 20 | 300 | 354 | 347 | | | 1.9 | 2.5 | + .6 |
| 3 | Special Emphasis | 14 | 374 | 407 | 407 | 0.87 | 0.36 | 2.7 | 3.1 | + .4 |
| | Comparison | 19 | 363 | 390 | 390 | | | 2.6 | 2.9 | + .3 |
| 4 | Special Emphasis | 15 | 418 | 461 | 459 | 10.6 | <0.01 | 3.3 | 4.2 | + .9 |
| | Comparison | 13 | 406 | 420 | 423 | | | 3.1 | 3.3 | + .2 |
| 5 | Special Emphasis | 14 | 390 | 417 | 418 | 0.67 | 0.42 | 2.9 | 3.2 | + .3 |
| | Comparison | 28 | 382 | 402 | 402 | | | 2.8 | 3.0 | + .2 |
| 6 | Special Emphasis | 14 | 421 | 477 | 471 | 1.02 | 0.32 | 3.3 | 4.6 | +1.3 |
| | Comparison | 22 | 392 | 451 | 455 | | | 2.9 | 3.9 | +1.0 |

# TABLE F.13

## IMPACT SUMMARY FOR PROJECT YEAR 1978-79
## STUDENTS BELOW GRADE MEAN

**DEPENDENT VARIABLE:** SDRT Comprehension Total Posttest Scaled Score

**INDEPENDENT VARIABLE:** Treatment

**COVARIATE:** SDRT Comprehension Total Pretest Scaled Score

Site: CALIFORNIA

| ANCOVA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 14 | 298 | 367 | 339 | 0.52 | 0.48 | 1.9 | 2.6 | + .7 |
| | Comparison | 9 | 244 | 290 | 349 | | | 1.4 | 1.8 | + .4 |
| 3 | Special Emphasis | 13 | 333 | 387 | 390 | 12.4 | <0.01 | 2.3 | 2.8 | + .5 |
| | Comparison | 15 | 341 | 440 | 433 | | | 2.3 | 3.7 | +1.4 |
| 4 | Special Emphasis | 13 | 409 | 432 | 426 | 0.11 | 0.74 | 3.1 | 3.5 | + .4 |
| | Comparison | 11 | 375 | 416 | 423 | | | 2.7 | 3.2 | + .5 |
| 5 | Special Emphasis | 11 | 459 | 486 | 459 | 0.18 | 0.67 | 4.1 | 4.9 | + .8 |
| | Comparison | 8 | 396 | 438 | 475 | | | 3.0 | 3.6 | + .6 |
| 6 | Special Emphasis | 10 | 434 | 488 | 485 | 1.47 | 0.24 | 3.5 | 4.9 | +1.4 |
| | Comparison | 12 | 381 | 442 | 445 | | | 2.8 | 3.7 | + .9 |

# APPENDIX G

# METHODOLOGY

# APPENDIX G

## METHODOLOGY

This appendix describes the activities undertaken by GRC in the conduct of the second and third years[1] of data collection and the analysis of data collected over the 3 years of the Special Emphasis Project evaluation study. This summary of study methodology and procedures is presented in six parts including discussions of:

- Instrumentation
- Data Collection Procedures
- Problems in Data Collection
- Data Preparation and Reduction
- Preliminary Data Examination
- Data Analysis Procedures and Issues

### INSTRUMENTATION

Two major types of data were required to perform the process and impact evaluations required in this study:

- Data and information about the teachers and the student populations in the participating schools and educational practices employed in these schools.
- Data to be used in assessing the impact of the Special Emphasis Projects on the students and schools where these projects were implemented.

In several cases, a single instrument was used to collect data for both of these purposes. Instruments used in this study, and the evaluation component for which data in each instrument were used, are summarized in Table G.1.

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[1] First year data collection was performed by the original evaluation contractor, Applied Management Sciences, Inc.

## TABLE G.1

## STUDY INSTRUMENTS AND USE(S)

| Instrument | Use of Data | |
|---|---|---|
| | Process Study | Impact Study |
| 1. The Stanford Diagnostic Reading Test (SDRT) | | X |
| 2. The Classification of Teaching Practices | X | X |
| 3. Project Director Questionnaire | X | |
| 4. Experimental School Principal Questionnaire | X | X |
| 5. Comparison School Principal Questionnaire | X | X |
| 6. Reading Specialist Questionnaire | X | |
| 7. Experimental School Classroom Teacher Questionnaire | X | X |
| 8. Comparison School Classroom Teacher Questionnaire | X | X |
| 9. Librarian Questionnaire | X | |
| 10. Student (Grade 3) and Student (Grades 4-6) Questionnaires | | X |
| 11. Parent Questionnaire | | X |
| 12. Student Information Checklist | X | |
| 13. Classroom Observation Protocol | X | |

(Copies of all instruments used in this study are contained in Volume II of this report.)

Instruments 1 through 11 (in Table G.1) had been selected and/or developed by the original evaluation design contractor and originally cleared by the Office of Management and Budget (OMB) for use in only the first year data collection.

The Student Information Checklist--which sought demographic information on students in the participating schools--was developed by the original study contractor and USOE during the first year of this study but was not used in the first year data collection activities. The Student Information Checklist and instruments 1 through 11 were submitted to OMB by USOE prior to the award of the continuation contract to GRC. These instruments were again cleared for only 1 year.

During the collection of data for the second year of the Special Emphasis Project, GRC identified several limitations in study instruments 3 through 11. Limitations were found in:

- The structure of some questions--the consequence of which was that questions could be interpreted in several ways and, as a result, the data secured were inconsistent and non-comparable.
- The length and specific content of some instruments--the consequence of which was that teachers complained about the time required to complete questionnaires and did not always provide information which could be used in the final data analysis.

In view of these limitations, GRC conducted a detailed review of all instruments and modified these instruments, where appropriate, to clarify ambiguous questions and to eliminate questions not directly related to the objectives of this study.

Revised instruments were cleared through the Federal Education Data Acquisition Committee (FEDAC) in 1979 and used in the final round of data collection in the spring of 1979.

DATA COLLECTION PROCEDURES

Spring, summer, and fall data collection activities focused on different purposes and entailed slightly different procedures. The major purposes of the spring site visits were to:

- Administer the data collection instruments to each of the nine respondent groups and to assist in the administration of the SDRT.
- Conduct interviews with district administrators, principals, and project directors to gain additional anecdotal information.

- Conduct observations of classroom teachers and reading specialists and/or reading teachers in Special Emphasis and comparison schools.

The purpose of the summer site visits was to:

- Identify the types of activities which were provided by these programs.
- Document the manner in which teaching approaches, instructional intensity, and staffing patterns resembled or differed from the regular school year Special Emphasis program.
- Determine the ID numbers and attendance records of students who participated in the summer program. Because attendance data had not been obtained during the 1977 summer program, GRC attempted also to obtain these data.

The purpose of the fall site visits was to:

- Assess comparability of the experimental and comparison schools, thereby assessing the integrity of the experimental design. The data gathered during this process represented a set of annual baseline data for each project.
- Collect information to determine whether the projects met the criteria that were established in the legislation and the regulations.
- Supervise the administration of the SDRT.

Data collection activities for the study were undertaken in fall 1976 and spring, summer, and fall 1977 by the original study contractor and in spring, summer, and fall 1978 and 1979 by GRC. Table G.2, Data Collection Schedule, provides a summary of the utilization of the study instruments during the respective data collection periods. (Procedures employed in the 1976-77 school year and fall 1977 data collections conducted by the original study contractor are described in the First Annual Report.)

## TABLE G.2

## DATA COLLECTION SCHEDULE

| | Data Collection Points | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1976 | 1977 | | | 1978 | | | 1979 | | |
| Instrument | Fall | Spring | Summer | Fall | Spring | Summer | Fall | Spring | Summer | Fall |
| Stanford Diagnostic Reading Test | X | X | | X | X | | X | X | | X |
| Student Information Checklist | | | | | X | | | X | | |
| Project Director Questionnaire | | X | | | X | | | X | | |
| Experimental School Principal Questionnaire | | X | | | X | | | X | | |
| Comparison School Principal Questionnaire | | X | | | X | | | X | | |
| Reading Specialist Questionnaire | | X | | | X | | | X | | |
| Experimental School Teacher Questionnaire | | X | | | X | | | X | | |
| Comparison School Teacher Questionnaire | | X | | | X | | | X | | |
| Classification of Teaching Practices | | X | | | X | | | X | | |
| Classroom Observation Protocol | | X | | | X | | | X | | |
| Librarian Questionnaire | | X | | | X | | | X | | |
| Student Questionnaire | | X | | | X | | | X | | |
| Parent Questionnaire | | X | | | X | | | X | | |
| Summer Program Topic Guide | | | X | | | X | | | X | |
| Site Close-out Topic Guide | | | | | | | | | | X |

When GRC assumed responsibility for this study in April 1978, several changes were incorporated into the data collection activities:

- Data on the demographic characteristics of students and specific treatments in reading instruction were collected for the first time.
- The responsibility for the administration of the SDRT was shifted from the reading specialists to the individual classroom teacher. This change was motivated by a need to equalize the conditions of administration in both experimental and comparison schools and to comply with the administration instructions of the SDRT manual.
- The testing and questionnaire administrations were systematized by the use of briefing sessions with teachers followed by written instructions for teachers and project supervisors. (Instructions are contained in Volume II of this report.)
- Special consideration was given to the concerns of comparison school staff regarding their participation in the study. In response to their concerns, GRC provided an update on the purpose and scope of the study, required that the comparison teachers test their own students under supervision of GRC and project reading specialists, and provided the teachers with printouts of test score results on the SDRT for their students.

At the beginning of the 1978 and 1979 visits, GRC/Americas staff met with the entire staffs of the respective schools to introduce the evaluation team, provide an update on the evaluation, listen to their concerns, and elicit their cooperation. Project directors at each of the project sites were responsible for coordinating the data collection activities.

### Supervision of the Testing - Spring and Fall Data Collections

To assure intersite consistency in the administration of the SDRT, GRC developed a set of instructions designed to overcome some of the problems experienced by the previous contractor. The key features of these procedures were:

- Supervision of the entire testing process in both the Special Emphasis and comparison schools by Special Emphasis reading specialists who also were available to provide assistance when necessary.
- Administration of the SDRT by the respective classroom teachers of reading. Each teacher was instructed to adhere to the directives in the SDRT manual which he or she received in advance of the testing.
- Careful coding of the test booklets to assure correct identification of each student while preserving the student's anonymity.
- Onsite supervision of the testing by GRC/Americas staff who monitored the testing rooms without distracting the children being tested.
- Notation of any special conditions with respect to individual students present during the testing. For example, instances of emotional upset, illness, or students making random markings were afterwards noted on the test booklets by the administering teacher.

## Collection of Program and Participant Data - Spring Data Collections

The collection of program and participant data was designed to coincide with the spring administration of the SDRT.

All staff questionnaires were filled out by the respondents after a group briefing by GRC/Americas staff. Directions for answering specific questions were provided on each instrument. Additionally, GRC/Americas staff assisted respondents with clarifications when necessary and personally collected completed instruments to assure confidentiality of responses.

Instruments to which students responded were self-explanatory; however, in classes where students had reading problems, teachers read the questions to the class.

Parent instruments were given to all students in grades 1 through 6 to be delivered to parents and returned within a week. To assure an adequate response rate, follow-up procedures were undertaken by individual project directors in conformance with district policies. Distribution and collection of these instruments were the responsibility of the classroom teachers.

All questionnaires were administered from mid-May through early-June 1978 and 1979, with the exception of the site "close out" topic guide which was administered in fall 1979.

The final round of site visits was made to each of the project sites to monitor the final round of testing and conduct "close out" interviews with a sample of teachers from the Special Emphasis schools, the principal, project director, and cognizant official from the school district. These interviews provided a retrospective assessment of the implementation of Special Emphasis as well as perceptions of the residual effects of the program after Federal funding ended.

## PROBLEMS IN DATA COLLECTION

In spite of an attempt to carefully specify procedures for data collection, a number of problems arose at individual sites. A brief summary of these problems follows.

### General Problems

The project sites in general experienced 10-30% student turnover during each year of the evaluation. A combination of student turnover and the coding problems effectively reduced the total number of pre- and posttest observations available for analysis.

The timing of the spring visits contributed to several overall problems, including:

- Students were taking the SDRT and their school district's standardized tests back to back. Test fatigue was apparent for students, teachers, and administrators.
- End of the school year activities (picnics, trips) were distracting to the testing process, inhibiting students' performance on the SDRT.
- Teachers and administrators had pressing end-of-the-year paperwork demanding attention and were vexed over the additional work entailed by the testing.

To minimize these problems and their effect on the study, GRC attempted to schedule its spring visits several weeks before the end of the school year and at times suggested by local principals and project staff.

Problems of data collection encountered at the specific Special Emphasis sites are summarized below.

Louisiana

Coding problems on the SDRT caused delays in the data reduction process, and contributed to a loss in the number of observations when coding problems could not be resolved. For example, the ID codes assigned to grade 3 students in the comparison school during spring 1977 were replaced by new ID codes in fall 1977, causing the loss of these observations. Other instruments, namely those for students and parents, were returned to GRC with only the site and school identifying numbers affixed. Student questionnaires, grade 3, were not received for 1977-78 school year.

Michigan

Owing to scheduling conflicts and local staff preferences, some of the testing was held at a time when GRC staff was not present to monitor. Further, reading specialists from the experimental school administered the reading tests in the comparison school in spring 1978, contrary to specific directions. GRC also noted that testing of younger children, in some instances, was conducted on a single day, contrary to directives in the SDRT manual. Sixth grade students were not tested during spring and fall 1979 because they had been transferred to other schools.

### Ohio

Because of a union dispute, the SDRT was administered in the comparison school by the Special Emphasis project director and the district reading and language arts supervisor. In addition, GRC was unable to observe reading instruction in all classrooms. Because of the court-ordered dispersion of students in the fall of 1978, seventh grade students were not tested on the SDRT.

### Tennessee

No major data collection problems occurred.

### Texas

The administration of the testing in fall 1978 at the comparison school was not monitored by GRC/Americas. In addition, teacher administrators of the test erroneously omitted the final subtests for first graders in spring 1978, in effect losing observations on first graders for that data point. In addition, during the first year of the study, some students were assigned duplicate ID codes.

### West Virginia

Lack of communication between the project director and the comparison school, plus a growing reluctance on the part of the comparison school to participate in the Special Emphasis project, caused numerous problems at this site. Student Information Checklists were not completed in the comparison school during the spring 1978 data collection. They were, however, completed the following fall. Student and parent questionnaires from the Special Emphasis school lacked complete coding, limiting the analysis to aggregated data. Student and parent questionnaires were never administered in the comparison school in 1978. A number of student and teacher identification code problems were also experienced. During the final round of testing, seventh graders were not tested until 5 weeks after the other students. In addition, the Special Emphasis school principal ordered large-scale out-of-level testing of students, whereas few students in the comparison school were similarly "downshifted."

## California

Some teachers in the comparison school exhibited an indifference toward the study to the extent of giving lackadaisical responses to questionnaire items. Coding on all parent questionnaires was incomplete. Attendance data for summer 1979 were not available.

## DATA PREPARATION AND REDUCTION

The data preparation and reduction process was an ongoing activity. Initially, all data tapes received from AMS were reviewed by GRC to determine content and quality of the data. From this initial assessment, GRC identified several problems with the coding of the SDRTs:

- In fall 1976, only a portion of the fifth and sixth grade students were assigned unique 4-digit ID codes. Therefore, scores could only be identified by site, school, and grade, but not by individual student.
- In a number of cases, for spring and fall 1977, two and sometimes three students had been assigned the same 4-digit ID codes.

As a result, GRC established a series of validation checks to assure the accuracy of the data for future data collections. The data previously collected by AMS for fall 1976, spring 1977, and fall 1977 was checked and, to the extent possible, corrections were made. GRC decided at this point, with the concurrence of the USOE project officer, to drop the fall 1976 data point from the analysis due to the inability to link a sufficient number of the test scores to individual students.

For all testing dates after fall 1977, all SDRT answer booklets were batched upon receipt at GRC into groups based on site, school, grade, and test level taken. Each booklet was checked for completeness and each 10-digit code was checked for omissions or errors. The SDRTs were then sent to The Psychological Corporation to be machine scored. Initially, raw scores, grade equivalents, and percentiles were received for each subtest taken. For spring 1979 and fall 1979, scaled scores were also received for each student.

When the scored tape was returned to GRC, an edit was performed to determine whether the tape was complete and to establish a new student identification code which included the site, school, 4-digit ID code, student birth month, birth year, and sex. Additionally, duplicate records and records without adequate identification were eliminated, and range checks were performed on all data fields. For those tapes without scaled scores, a conversion was performed to transform raw scores to scaled scores while preserving the initial raw score.

In addition, as each tape was processed, an index was created and updated to form a complete test history for each student. With each subsequent testing, each record was checked to determine consistency between testings of the birthdate, sex, and grade level for each student. The extent of out-of-level testing was also determined.

As this process continued, it became apparent that there were numerous errors either in the 4-digit ID code assigned or in the recording of birthdate and sex on the answer booklet. Therefore, during spring 1979, each project site was given a complete testing history for each student through fall 1978 and asked to verify the accuracy of the birthdate and sex associated with the 4-digit ID code. As a result, many errors were resolved preserving as much data as possible for the analysis. Table G.3, Statistics on Error Resolution, contains a complete summary of the magnitude of the error resolution process.

## TABLE G.3

## STATISTICS ON ERROR RESOLUTION

| | SDRT TEST DATE | | | | | | SICL* COLLECTION | |
|---|---|---|---|---|---|---|---|---|
| | SPRING 1977 | FALL 1977 | SPRING 1978 | FALL 1978 | SPRING 1979 | FALL 1979 | SPRING 1978 | SPRING 1979 |
| Number Tests Scored | 6202 | 7292 | 5710 | 5221 | 4742 | 4637 | | |
| Number Instruments Received | | | | | | | 5819 | 4637 |
| RECORDS DELETED DUE TO: | | | | | | | | |
| 1. Incomplete identification | 23 | 23 | 20 | 4 | 2 | 5 | 2 | 5 |
| 2. Incomplete testing | 133 | 1081[†] | 335 | 59 | 18 | 23 | - | - |
| 3. Other (includes duplicate tests, tests from two sites not refunded in 1977) | 915 | 800 | 39 | 5 | 9 | 63 | 40 | 25 |
| NET RECORDS | 5131 | 5388 | 5316 | 5153 | 4713 | 3999 | 5777 | 4607 |
| RECORDS REQUIRING CORRECTION OF: | | | | | | | | |
| 1. Birthdate only | 383 | 341 | 282 | 403 | 240 | 312 | 441 | 319 |
| 2. Sex only | 101 | 101 | 77 | 73 | 43 | 59 | 97 | 198 |
| 3. Both birthdate and sex | 28 | 12 | 12 | 23 | 11 | 7 | 16 | 50[§] |
| 4. Special condition only | - | - | - | - | - | - | 34 | 48 |
| 5. Student identification only | 64 | 80 | 58 | 32 | 17 | 8 | 41 | 11 |
| 6. Site only | 5 | 2 | 1 | 2 | 1 | - | - | - |
| 7. School only | 12 | 13 | 5 | 8 | 8 | 6 | - | - |
| 8. At least two of school, student identification, birthdate, and sex | 7 | 7 | 3 | 1 | - | - | 1 | - |
| 9. Grade only | 16 | 19 | 59 | 2 | 11 | - | 3 | 3 |
| RECORDS WITH OUT-OF-LEVEL TESTING | 4 | - | 102 | 132 | 153 | 129 | N/A | N/A |
| RECORDS GRADE INCONSISTENT WITH PREVIOUS TESTING (INCLUDES STUDENTS RETAINED IN GRADE) | N/A | 327 | 9 | 201 | 12 | 206 | N/A | N/A |

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[*] Student Information Checklist

[†] First graders at some sites were given a portion of the SDRT.

[§] First graders at one site were given a portion of the SDRT.

After the error resolution process was completed, the latest test scores were added to the data base compiled from the previous test scores.

A similar procedure was employed to validate the data on the Student Information Checklist, and these data were also added to the data base.

The final data base contains a record for each student who took any of the SDRTs between spring 1977 and fall 1979. Each record contains demographic data and reading intensity data from the Student Information Checklists. These records also contain the student's score for each subtest for each testing represented as:

- Raw Score -- The number of questions the student answered correctly.
- Grade Equivalent -- Represents the typical performance of pupils in a specified grade when tested in a given month of the school year. The grade equivalent scores can range from 1.0 to 12.9, but the range is smaller for the red and green level tests.
- Scaled Scores -- Express performance on a single scale which cuts across test times and test levels. The usefulness of a single score is that it permits comparisons of student's performance over time and aggregation of students who took different levels of the SDRT. It is the most appropriate form of the student's score to use in evaluating change in performance over time since scaled scores have equal intervals.

The completed data base contains 9885 records.

## PRELIMINARY DATA EXAMINATION

Following the correction of coding errors and creation of the complete data base, a preliminary examination of the data was performed to:

- Develop a complete SDRT test history for each site.
- Determine whether differences existed between students for whom both pre- and posttest scores had been secured and students for whom only pre- or posttest scores had been secured.
- Determine whether ceiling or floor[1] effects were encountered.

The results of this preliminary examination provided data on attrition in the study sample. These data, combined with test scores for all students, were used to examine the effect of attrition on the generalizability of evaluation results. The statistical methodology used in the analysis of the impact of Special Emphasis treatment on reading achievement was reexamined to determine its appropriateness in view of the limitations of the data. A detailed discussion of each step in the preliminary examination follows.

### SDRT Test History

A SDRT Test History for each site is contained in Appendix A. An example of one SDRT Test History appears on Table G.4. This table provides a frequency count, by grade, school, and project year, of:

- Students with SDRT scores for any of the test points between the spring of the previous school year and the spring of the designated project year (line 1). For example, for project year 1977-78, the frequency count included any student with SDRT scores for one or more of the following data points: spring 1977, fall 1977, and spring 1978.
- Students designated as having learning problems (line 2).
- Students with pretest SDRT scores only (line 3). This line represents a count of students for whom SDRT scores were obtained in the spring of the previous school year and/or the fall of the designated project year, but for whom SDRT scores were not obtained in the spring of the designated project year.

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[1] These terms are identified in the Glossary.

## TABLE G.4

## SDRT TEST HISTORY

Project Year 1977-78

Site: WEST VIRGINIA

| Grade: | 2 | | 3 | | 4 | | 5 | | 6 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| School: | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. |
| 1. Total No. Students took SDRT (spring, fall 1977; spring 1978) | 70 | 74 | 68 | 65 | 71 | 65 | 69 | 72 | 71 | 74 | 349 | 350 |
| 2. No. Designated as Having Learning Problems | 5 | 0 | 7 | 6 | 8 | 7 | 0 | 0 | 0 | 0 | 20 | 13 |
| 3. No. took Spring/Fall 1977 SDRTs only | 10 | 7 | 11 | 12 | 17 | 15 | 8 | 18 | 14 | 13 | 60 | 65 |
| 4. No. took Spring 1978 SDRT only | 10 | 15 | 6 | 12 | 8 | 6 | 9 | 15 | 12 | 15 | 45 | 63 |
| 5. No. in Sample Size for ANCOVA Analyses (1-(2+3+4)) | 45 | 52 | 44 | 35 | 38 | 37 | 52 | 39 | 45 | 46 | 224 | 209 |

Project Year 1978-79

| Grade: | 2 | | 3 | | 4 | | 5 | | 6 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| School: | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. | Sp.Em. | Comp. |
| 1. Total No. Students took SDRT (spring, fall 1978; spring 1979) | 83 | 79 | 66 | 69 | 69 | 63 | 73 | 66 | 77 | 68 | 368 | 345 |
| 2. No. Designated as Having Learning Problems | 0 | 0 | 3 | 0 | 4 | 0 | 7 | 0 | 0 | 0 | 14 | 0 |
| 3. No. took Spring/Fall 1978 SDRTs only | 4 | 13 | 4 | 21 | 10 | 15 | 8 | 14 | 9 | 24 | 35 | 87 |
| 4. No. took Spring 1978 SDRT only | 11 | 8 | 7 | 8 | 13 | 8 | 11 | 14 | 13 | 9 | 55 | 47 |
| 5. No. in Sample Size for ANCOVA Analyses (1-(2+3+4)) | 68 | 58 | 52 | 40 | 42 | 40 | 47 | 38 | 55 | 35 | 264 | 211 |

- Students with posttest SDRT scores only (line 4).
- Students for whom both pre- and posttest scores were available and who, therefore, comprised the analytic sample on which analyses were conducted (line 5). Line 5 is computed by subtracting the total of lines 2, 3, and 4 from line 1.

The difference between the total number of students with any SDRT scores for the designated project year (line 1 on Table G.4 and the number in the analytic sample (line 5 on Table G.4) provides a measure of sample attrition due to student turnover, absenteeism, errors in coding SDRT answer booklets and purposive exclusion (students with diagnosed learning disabilities).

These data from Appendix A and the calculated level of retention are summarized in the right-hand columns (4 and 5) of Table G.5, Sample Retention Summary. The potential number of students, taken from Appendix A, is the total number of students who took any of the SDRTs for the designated project year, aggregated over grades 2 through 6. The actual number of students, also taken from Appendix A, is the number of students, aggregated over grades 2 through 6, who were included in the "whole grade" analytic sample. These numbers match the numbers of students contained in the impacts summaries in Appendix E. The percent of retention, then, is the actual number of students divided by the potential number of students. As noted in Table G.5, between 46% and 86% of the potential number of students are actually included in the 1977-78 "whole grade" analytic samples. Therefore, the level of attrition was between 14% and 54%. For 1978-79, the retention rate ranged from 32% to 72%, indicating attrition levels between 28% and 68%. This level of attrition can be partially attributed to mobility and absenteeism, but the high level of attrition for some sites would indicate other problems also.

A measure of mobility between school years for each site is also contained on Table G.5. This would not include students who moved during the 1978-79 school year. For example, for the Texas Special Emphasis school, 17% of the students were tested only during the 1977-78 project

# TABLE G.5

# SAMPLE RETENTION SUMMARY

|  |  | (1) | (2) |  | (3) |  | (4) |  |  | (5) |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  | Tested 77-78 Only |  | Tested 78-79 Only |  | Analytic Sample 77-78 (gr. 2-6) |  |  | Analytic Sample 78-79 (gr. 2-6) |  |  |
| Site | School | Net Student Sample* | N | % of Net† | N | % of Net§ | Potential | Actual | % | Potential | Actual | % |
| LA | Special Emphasis | 410 | 53 | 13% | 55 | 13% | 313 | 174 | 56% | 316 | 170 | 54% |
|  | Comparison | 957¶ | 215 | 22% | 111 | 12% | 721¶ | 395 | 54% | 699 | 365 | 52% |
| MI | Special Emphasis | 943 | 175 | 19% | 130 | 14% | 693 | 385 | 56% | 578 | 338 | 58% |
|  | Comparison | 826 | 162 | 20% | 112 | 14% | 615 | 307 | 50% | 48[illegible] | 266 | 55% |
| OH | Special Emphasis | 448 | N/A | N/A | N/A | N/A | 317 | 175 | 55% | N/A | N/A | N/A |
|  | Comparison | 322 | N/A | N/A | N/A | N/A | 275 | 142 | 52% | N/A | N/A | N/A |
| TN | Special Emphasis | 413 | 47 | 11% | 46 | 11% | 320 | 197 | 62% | 308 | 204 | 66% |
|  | Comparison | 276 | 40 | 14% | 29 | 11% | 207 | 96 | 46% | 159 | 100 | 63% |
| TX | Special Emphasis | 779¶ | 131 | 17% | 241 | 31% | 538¶ | 278 | 52% | 428** | 193 | 45% |
|  | Comparison | 952 | 155 | 16% | 302 | 32% | 649¶ | 334 | 51% | 510** | 249 | 48% |
| WV | Special Emphasis | 483 | 46 | 10% | 62 | 13% | 349 | 224 | 64% | 368 | 264 | 72% |
|  | Comparison | 468 | 53 | 11% | 59 | 13% | 350 | 209 | 60% | 345 | 211 | 61% |
| CA | Special Emphasis | 309 | 14 | 5% | 101 | 33% | 172 | 148 | 86% | 264 | 118 | 45% |
|  | Comparison | 458 | 44 | 10% | 147 | 32% | 279 | 187 | 67% | 359 | 116 | 32% |

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[*] Does not include students graduating spring 1977 or first graders in spring 1979.

[†] Does not include students graduating spring 1977.

[§] Does not include first graders in spring 1979.

[¶] Adjusted to compensate for coding errors.

[**] Does not include grade 2 for which no analysis could be done.

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year (column 2) and 31% were tested only during the 1978-79 project year (column 3). Therefore, 48% of the net student sample, did not participate in the evaluation for the full length of the project. The net student sample (column 1) is the total number of students tested at each site over the full course of the study, with the exception of students graduating from the program in spring 1977 and first graders in spring 1979.

## Differences Between "Pre- and Posttest" Groups and "Pre" or "Posttest Only" Groups

Students included in the analytic samples are those with both pretest SDRT scores and posttest SDRT scores. Students excluded from the sample, but for whom partial information is available, are those with either a pretest SDRT score or a posttest SDRT score only. (No data are available for students who were in the school during the designated project year but who took none of the SDRTs.)

Summaries of the differences in "comprehension total"[1] scores between students included in the analytic samples and those excluded from the sample are contained in tables for each site in Appendix B. An example of one table from this series is presented in Table G.6.

Table G.6 identifies differences--by project year, school, and grade--in test scores for "pretest only" students and "posttest only" students as contrasted with the "pre- and posttest" students. For each "pre- and posttest" group, an interval was calculated with limits of ± one-third of a standard deviation from the mean "comprehension total" scaled score of that group. This interval was then used as the reference for determining whether the "pretest only" or "posttest only" groups differed substantially from the "pre- and posttest" group, i.e., the group used in the analysis of impact. One-third of a standard

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[1] Comprehension total is a composite score derived from scores on two subtests of the SDRT.

## TABLE G.6

## SUMMARY OF DIFFERENCES BETWEEN STUDENTS WITH BOTH PRE- AND POSTTEST SCORES AND STUDENTS WITH PRETEST OR POSTTEST ONLY

Site: TENNESSEE

Project Year: 1977-1978

| SCHOOL | | GRADE (Spring 1978) | | | | |
|---|---|---|---|---|---|---|
| | | 2 | 3 | 4 | 5 | 6 |
| Special Emphasis | Pretest Only | 0 | - | + | 0 | - |
| | Posttest Only | + | + | 0 | + | 0 |
| Comparison | Pretest Only | 0 | 0 | - | 0 | 0 |
| | Posttest Only | + | 0 | + | - | + |

Project Year: 1978-1979

| SCHOOL | | GRADE (Spring 1979) | | | | |
|---|---|---|---|---|---|---|
| | | 2 | 3 | 4 | 5 | 6 |
| Special Empahsis | Pretest Only | - | 0 | 0 | + | 0 |
| | Posttest Only | 0 | + | 0 | + | + |
| Comparison | Pretest Only | 0 | + | 0 | - | 0 |
| | Posttest Only | - | + | + | - | 0 |

KEY:

0: Difference between mean scaled score of pre- or posttest only group is less than 1/3 standard deviation from mean of pre- and posttest group.

+: Mean scaled score of pre- or posttest only group is more than 1/3 standard deviation higher than mean of pre- and posttest group.

-: Mean scaled score of pre- or posttest only group is more than 1/3 standard deviation lower than mean of pre- and posttest group.

deviation has been suggested as a useful rule of thumb for consideration of treatment effects as educationally significant.[1]

If the "pretest only" or "posttest only" group's mean "comprehension total" scaled score fell within the calculated interval, there were assumed to be no substantial differences between that group and the "pre- and posttest" group. On the other hand, if the mean "comprehension total" scaled score for the "pretest only" or "posttest only" group fell outside the calculated interval, it was assumed that major differences did exist between that group and the "pre- and posttest" group. The existence of systematic differences would indicate that the evaluation results based on students with both pre- and posttest scores may not be representative of all the program's participants and that the conclusions could not be generalized for all participants.

For example, in Table G.6, for grade 2 in project year 1977-78 and "pretest only" groups for both the Special Emphasis and comparison schools are designated by "0," indicating that students who took the pretest did not differ substantially from their respective "pre- and posttest" groups. On the other hand, a "+" for the "posttest only" groups for both schools indicates that the groups for students who took the posttest, but not the pretest, scored higher than the groups on which the analysis was performed. For this case, the direction is the same for both the treatment and comparison schools, thus, the posttest scores used in the analyses of impact might be an underestimate for both schools. A "-" for the "pretest only" group for project year 1977-78, grade 3, Special Emphasis school, indicates that the students who took the pretest, but not the posttest, scored lower than the group on which the analysis was performed.

There are many possible reasons why the "pretest only" or "posttest only" groups differed from the "pre- and posttest" group, e.g., testing during times of the year when certain groups of students are absent. An investigation to determine these reasons for each instance of difference is beyond the scope of this study, but the existence of differences has been examined to determine the representativeness of the analytic samples.

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[1] D. P. Horst, G. K. Tallmadge, and C. T. Wood, A Practical Guide to Measuring Project Impact on Student Achievement. (Washington, D.C., US Government Printing Office, 1976) (Stock No. 017-080-01460), p. 69.

## Floor and Ceiling Effects

If the SDRT administered to lower achieving students in each analytic sample was too difficult, these students would only be able to answer a few questions correctly. When this occurs, students are said to have encountered the test floor. The effect of an apparent test floor is that the student's score would be an overestimate of his/her true score.

If the test was too easy for higher achieving students, these students would be able to answer all or almost all questions correctly, the test ceiling would be encountered. The resulting scores would underestimate the students' true scores.

The presence of floor effects on a pretest or ceiling effects on a posttest would indicate that the observed gain is an underestimate of the true gain. On the other hand, the presence of ceiling effects on a pretest or floor effects on a posttest would indicate that the observed gain is an overestimate of the true gain. Where floor or ceiling effects are encountered for both the pretest and the posttest, either an underestimate or an overestimate of true gain can result.

An examination of the SDRT mean "comprehension total" raw score for each class unit for each test date was performed to determine whether floor and/or ceiling effects were encountered and, if so, the implications for the analysis of impact. While the test floor or ceiling may have been encountered for individual students within all classes, the effect of the floor and/or ceiling effect vis-a-vis individual students was not considered serious--e.g., was assumed to have no significant effect on the outcome of the analysis--unless the class mean "comprehension total" raw score was below 30% correct or above 70% correct for the test floor or ceiling, respectively. The criterion of 30% correct to indicate serious floor effects was chosen because the two reading comprehension subtests on the SDRT are either three-choice or four-choice multiple questions and, on a pure chance basis, a student would score between 25% and 33% correct. Therefore, a mean class score of 30% correct would indicate that a substantial number of students in the class scored at or below the chance level. On the other hand, a mean class score above 70%[1] correct would indicate that a substantial number of students answered all, or almost all, the questions correctly.

Appendix C contains summaries of the class-by-class mean "comprehension total" raw scores for each site and school for each test date. A 'C' or 'F' opposite the class scores on these tables, indicates whether ceiling or floor effects were encountered. Table G.7 provides an example of one such summary. For each test point and grade, the table provides the mean "comprehension total" raw score for each class unit. For example, for spring 1978, grade 3, there are four class units with mean raw scores of 51.6, 39.5, 41.6, and 47.0. A student's raw score was included in the computation of the class mean raw score if the student (1) was not designated as having a learning problem and (2) took the appropriate test level for his/her grade. For the cited example, two of the four classes encountered serious ceiling effects as indicated by the 'C' following the mean raw score.

Examination of the tables in Appendix C shows that serious ceiling effects were encountered at all project sites. While there are occurrences of ceiling effects for all grades and test dates, there is a greater frequency for grades 2 and 4 for each spring testing date. For spring 1977, in the aggregate, 89% of the second grade classes and 86% of the fourth grade classes encountered serious ceiling effects; for spring 1978, 90% and 86%, respectively, and for spring 1979, 95% and 89%, respectively, encountered serious ceiling effects.

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[1] This figure was suggested by Dr. Bjorn Karlsen, an author of the SDRT.

# TABLE G.7

## MEAN RAW SCORES ON THE SDRT REPORTED BY CLASS

Site: TEXAS School: SPECIAL EMPHASIS

| | SDRT TEST POINTS | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPRING 1977 | | | FALL 1977 | | | SPRING 1978 | | | FALL 1978 | | | SPRING 1979 | | | FALL 1979 | | |
| GRADE | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind | N | Mean | Ind |
| 1 | 25 | 49.3 | | | | | | | | | | | 26 | 62.6 | | | | |
| | 22 | 52.2 | | | | | | | | | | | 24 | 59.4 | | | | |
| | 25 | 48.3 | | | | | | | | | | | 21 | 73.1 | C | | | |
| | 23 | 54.1 | | | | | | | | | | | 19 | 65.3 | C | | | |
| | 20 | 56.7 | | | | | | | | | | | | | | | | |
| 2 | 23 | 78.6 | C | 21 | 51.1 | | 21 | 77.9 | C | 21 | 63.7 | C | 18 | 82.2 | C | 18 | 68.2 | C |
| | 24 | 80.9 | C | 22 | 58.1 | | 23 | 83.1 | C | 21 | 59.8 | | 19 | 84.5 | C | 18 | 70.7 | C |
| | 24 | 79.7 | C | 23 | 54.3 | | 22 | 78.0 | C | 20 | 63.1 | C | 20 | 81.9 | C | 18 | 71.7 | C |
| | 24 | 75.5 | C | 23 | 54.0 | | 23 | 77.2 | C | 17 | 55.0 | | 18 | 84.4 | C | 16 | 69.9 | C |
| | | | | 24 | 65.0 | C | 23 | 82.2 | C | 19 | 56.2 | | 19 | 78.9 | C | | | |
| 3 | 26 | 44.2 | C | 24 | 45.7 | C | 24 | 51.6 | C | 25 | 37.3 | | 25 | 49.5 | C | 18 | 35.5 | |
| | 28 | 49.3 | C | 24 | 33.3 | | 25 | 39.5 | | 29 | 37.5 | | 31 | 47.3 | C | 18 | 43.7 | C |
| | 27 | 47.1 | C | 23 | 32.1 | | 23 | 41.6 | | 27 | 38.7 | | 25 | 46.7 | C | 19 | 38.4 | |
| | | | | 22 | 38.6 | | 18 | 47.0 | C | 25 | 34.2 | | 28 | 41.6 | | 14 | 39.8 | |
| | | | | | | | | | | | | | | | | 18 | 36.2 | |
| 4 | 28 | 54.3 | C | 22 | 48.1 | C | 21 | 50.6 | C | 21 | 49.2 | C | 20 | 50.6 | C | 23 | 48.8 | C |
| | 25 | 51.8 | C | 22 | 51.4 | C | 22 | 53.9 | C | 16 | 46.6 | C | 17 | 51.2 | C | 27 | 45.5 | C |
| | 24 | 48.8 | C | 23 | 46.8 | C | 23 | 48.3 | C | 26 | 52.9 | C | 27 | 52.8 | C | 25 | 45.0 | C |
| | | | | 22 | 44.2 | C | 19 | 51.2 | C | 17 | 42.2 | C | 14 | 51.6 | C | 23 | 43.6 | C |
| 5 | 29 | 31.9 | | 52 | 28.6 | | 29 | 36.8 | | 13 | 25.4 | | 14 | 27.7 | | 16 | 30.4 | |
| | 26 | 34.7 | | 52 | 30.3 | | 26 | 36.3 | | 22 | 24.2 | | 27 | 36.2 | | 15 | 28.7 | |
| | 26 | 37.9 | | 46 | 30.8 | | 26 | 35.5 | | 39 | 36.0 | | 26 | 50.0 | C | 18 | 35.9 | |
| | 25 | 27.0 | | 25 | 27.2 | | | | | 6 | 24.2 | | 20 | 28.9 | | 13 | 26.3 | |
| 6 | | | | | | | | | | 26 | 36.0 | | | | | 15 | 27.5 | |
| | | | | | | | | | | 24 | 32.9 | | | | | 17 | 38.2 | |
| | | | | | | | | | | 18 | 30.2 | | | | | 22 | 48.9 | C |
| | | | | | | | | | | | | | | | | 19 | 29.5 | |

| Test Level | Maximum Score | Floor (F) Effect Below | Ceiling (C) Effect Above |
|---|---|---|---|
| Red | 90 | 27 | 63 |
| Green | 60 | 18 | 42 |
| Brown | 60 | 18 | 42 |

One reason for the preponderance of ceiling effects for grades 2 and 4 appears to be that the SDRT was intentionally designed to be easy so that even low achieving students could experience some success.[1] The result of this is that the distribution of test scores is negatively skewed rather than a normal distribution. The implications for the analysis of the impact of the Special Emphasis Project differs for each site, school, and grade dependent upon whether the ceiling was encountered on the pretest, the posttest, or both.

## DATA ANALYSIS PROCEDURES AND ISSUES

The data analysis performed by GRC can be divided into two major categories:

- A process analysis
- An impact analysis

The major features of the process analysis and the methodological issues and analysis of impact are discussed in the following topics.

### Process Analysis

The process analysis component of this study sought to:

- Provide a description of the Special Emphasis Project programs.
- Examine the degree to which each Special Emphasis project was in compliance with USOE staff and programmatic guidelines.
- Examine the comparability of Special Emphasis and comparison schools with respect to student characteristics, school size, school staffing patterns and staff qualifications, and other features thought to be potentially confounding variables.
- Examine the potential effect on the impact analysis of the Special Emphasis treatment of any noncomparability of the treatment and comparison schools.

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[1] B. Karlsen, et al, p. 5.

- Examine differences among Special Emphasis projects with respect to the delivery of the Special Emphasis treatment.

The process analysis of the Special Emphasis Project was based on data and information collected from classroom observations, questionnaires, and interviews. Data and information used in the Special Emphasis Project process analysis included both institutional programmatic data and data on student and staff characteristics. These data included information on the following factors:

Institutional/Programmatic Data

- School facilities.
- Qualifications and role functions of all Special Emphasis staff.
- Instructional services provided by the Special Emphasis program.
- Instructional materials used in the delivery of the Special Emphasis treatment.
- The inservice training program.
- Special features or circumstances.

Student/Staff Characteristics Data

- Student enrollment
- Racial/ethnic mix of student body
- Sex of students
- Percent of students receiving free or reduced-price lunch
- Percent of students for whom English is a second language
- Percent of students absent more than 25% of time
- Number of teachers
- Percent of teachers with graduate degrees
- Average teacher experience
- Average number of students/class

These data and information are reported on a site-by-site basis and examined across sites in Section 4.

## Impact - Methodological Issues

As noted in Section 3, Evaluation Design and Methodology, there were several issues that were raised and investigated during the course of the study which affected the analysis plan. These issues can be divided into four categories:

- The selection of a comparison group of students to compare with students receiving the Special Emphasis treatment.
- The selection of an appropriate measure of reading achievement.
- The use of posttest or gain score comparisons.
- The period of time over which to analyze the impact of Special Emphasis on reading achievement.

A discussion follows for each of these categories on the issues raised and the rationale for the decisions made.

### Selection of a Comparison Group of Students

The selection of appropriate groups to compare with the Special Emphasis students was required for both the school year program and the summer program. For the school year analysis, the selection of a comparison group for grades 1 and 2 posed no problem because all students in the Special Emphasis schools, except as noted in Section 5, participated in the Special Emphasis treatment. For the third through sixth grades, not all students in the Special Emphasis schools received the Special Emphasis "treatment." Therefore, procedures were investigated for grouping students on the basis of data being collected.

For the first annual report, Applied Management Sciences, Inc., used a procedure whereby the experimental group included only those students who were reading "one grade equivalent below average."[1] The comparison group included only those students in the comparison school who were below the highest pretest raw scores for the experimental group. Methodologically, this procedure presents two problems:

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[1] S. Frankel, et al, p. 2.16.

- Since students were not selected for Special Emphasis participation on the basis of the SDRT, the basis for inclusion in the analytic sample, the experimental group would not necessarily encompass all students who participated and might include some who did not participate.
- Since the comparison group was selected on the basis of a cutoff score derived from the experimental group, the comparison group would not necessarily represent the same proportion of students as the experimental group. This would lead to differential regression effects.[1]

Another method of grouping considered, and employed by GRC, was by grade, the implication being that the Special Emphasis Program encompassed the entire school population in grades 1 through 6 at the Special Emphasis school. While some students were receiving the Special Emphasis "treatment," the remaining students were involved in other activities, so there was an effect on the total population. While this is not an altogether satisfactory approach, it offers a starting point for consideration of impact and for sites with small enrollments provided sufficient students (more than 30) so that the sample mean represents an efficient estimate of the population mean.

Grouping students by class was also considered. Within the treatment school, this would permit comparisons among classes with respect to variations in instructional approach or classroom management style. This grouping would not permit direct comparisons with the classes in the comparisons school since no mechanisms were available for matching classes. In addition, an examination of teaching orientation showed that within each grade, there was virtually no variation in the approach or the management style as reported by teachers on the Classification of Teaching Practices instrument.

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[1] D.T. Campbell and A. Erlebacher, How Regression Artifacts in Quasi-experimental Evaluations Can Mistakenly Make Compensatory Education Look Harmful. In J. Hellmuth (Ed.), Compensatory Education: A National Debate. Vol. 3: Disadvantaged Child. New York: Brunner/Mazel, 1970, p. 195-196.

Grouping by class would have permitted the comparison of class performance with national norms established for the SDRT. The Special Emphasis classes could then be compared to the comparison classes based on changes in performance in terms of normal curve equivalents (NCE).[1] Percentile-to-NCE conversion tables were developed for the Title I evaluation and reporting system. Either the class mean raw score or the class mean scaled score for comprehension total on the SDRT could be converted to the corresponding percentile and then to the NCE.

Finally, groups could be developed to include an approximation of only those students for whom Special Emphasis was intended. The groups would consist of only those students scoring below the mean score for their grade in each school. Where the mean and median scores are close, approximately equal proportions of students would be included in the analytic samples for each school. This technique mitigates the problem of differential regression effects previously mentioned. The problem of inclusion of students who did not receive the Special Emphasis "teatment" remains, in addition to the problem of small sample sizes (less than 30). "In general, the smaller the sample, the more likely that the mean of the sample will be a less efficient estimation of the population mean."[2]

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[1] The NCE "is an equal-interval, normalized, standard score with a mean of 50 and a standard deviation of 21.06. It has a range from 1 to 99 and matches the percentile rank at values 1, 50, and 99." B. M. Fagan and D. P. Horst, Types of Test Scores, Technical Paper No. 8, Mountain View, CA, RMC Research Corporation, 1976, pp. 6-7.

[2] D. J. Palumbo, Statistics in Political and Behavioral Sciences, New York: Columbia University Press, 1977, p. 280.

The decision was made to perform the analysis of impact on reading achievement for both whole grade cohort groups, all the students within each grade for whom both the pretest and posttest scores were available, and for the groups of students with scores below their respective grade means. The analysis of impact for class groupings was not done because the ceiling effects which were encountered would have biased the conversion to class percentiles and lead to a distorted estimate of the change in class performance.

The measurement of program impact for the summer Special Emphasis Program presented a problem similar to that encountered in the comparison of classes. Because the program was voluntary, there were no mechanisms to match students in the corresponding comparison school to the students who participated in the summer program. The alternative was to compare the participant's performance with national norms established for spring and fall testings of the SDRT. However, the ceiling effects encountered for the spring testing prevents this analysis from producing valid and reliable results.

### Selection of Subtest Scores on Which to Base the Measurement of Reading Achievement

The criterion for the selection of subtests on which to base the measurement of reading achievement were:

- Commonality among all test levels.
- A measure of achievement rather than diagnosis of skill deficiencies.

The measure selected to assess achievement was the "comprehension total" score on the SDRT. The "comprehension total" score is a composite score which is the total of the two comprehension subtest scores for each level of the SDRT. For the red level, recommended for grades 1 and 2, the subtests that comprise "comprehension total" are "word reading" and "reading comprehension." For the green level, recommended for grades 3 and 4, and the brown level, recommended for grades 5 through 8, the subtests are "literal comprehension" and "inferential comprehension."

The "comprehension total" score was recorded in the data base as a raw score, grade equivalent, and scaled score. The raw score was used in the assessment of ceiling or floor effects since it was necessary to know the number of questions answered correctly. The corresponding grade equivalent was used in the trend analysis of students reading 1 or more years below grade level. Scaled scores were used for all statistical analyses, i.e., analysis of covariance (ANCOVA), since it is an equal interval scale permitting comparisons at different points on the scale and it was interlocked across test levels, mitigating the problem of ceiling effects encountered with the use of raw scores or grade equivalents.

Use of Posttest or Gain Score Comparisons

Once the criterion measure of reading achievement had been selected, a decision was required on the appropriate type of comparison to be made to determine the impact of the Special Emphasis Program. The objective was to determine whether the gain in reading achievement of the Special Emphasis treatment group was different from what would be expected of the same group of students without the treatment, where the expected gain is gauged by the performance of the comparison group. Both raw and residual gain score[1] comparisons have often been utilized in educational research to meet this type of objective. Because of the presence of errors of measurement in the raw score (indicated when the test-retest reliability is less than 1), a comparison of either the mean raw or residual gain, as measured by either raw or scaled scores, between the Special Emphasis and comparison groups could give a distorted view of true condition.[2] In addition, because of the presence of serious ceiling effects for many of the classes, the use of any type of gain score would have biased the results in favor of the initially low scoring group.

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[1] Residual gain scores are the difference between the observed posttest scores and the pretest scores predicted from the regression of posttest on pretest scores for the combined treatment and comparison groups.

[2] F. M. Lord, p. 21-38.

For the quasi-experimental treatment-comparison group design, the mechanism used considered the comparison group mean posttest score as to the no-treatment expectation with the pretest scores used to make compensating adjustments to the posttest scores for any initial differences between the treatment and comparison groups.

The two statistical techniques examined were:

- Covariance analysis
- Generalized multiple regression analysis

ANCOVA is appropriate where the two pre-existing groups are enough alike to be considered random samples from a single population. Generalized regression analysis is appropriate where small systematic differences exist between the treatment and comparison groups or the groups should be considered as random samples from different populations. However, in cases where the treatment and comparison groups are significantly different, it is not generally possible to assess the impact of an educational intervention,[1] even with the use of generalized multiple regression analyses.

A preliminary analysis of the data revealed that no systematic differences existed between the treatment and comparison groups in terms of pretest scores. It was also determined through factor analytic techniques that the pretest score accounted for the majority of the variance in the posttest score. The other variables considered as covariates were students' sex, racial/ethnic background, SES, parent education, and primary language. A preliminary investigation of intensity of instruction showed that within site and grade, there was virtually no variation in the intensity of instruction as reported by the classroom teachers.

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[1] C. K. Tallmadge, and D. P. Hout, A Procedural Guide for Validating Achievement Gains in Educational Projects. Washington, D.C., US Government Printing Office, 1976 (Stock No. 017-080-01460), p. 60.

The analytic technique employed in the analysis of the impact of the Special Emphasis Program on students' reading achievement was ANCOVA with the posttest score as the criterion (dependent) variable, the treatment (either Special Emphasis or comparison) as the independent variable, and the pretest score as the covariate.

### Period of Time on Which to Base the Analysis of Impact of Special Emphasis on Reading Achievement

Once it was determined that ANCOVA using posttest scores, adjusted for pretest differences, would be used to analyze the impact on reading achievement, it was necessary to determine the periods of time on which to assess impact. Because of the lack of comparison groups for the summer program, ANCOVA could not be used to analyze impact. For the school year program, however, data was available to analyze impact for project year 1977-78, project 1978-79, and the length of the study, 1977-1979. The posttest score used for each of these periods was the final spring "comprehension total" scaled score for the period under study, i.e., the spring 1978 score served as the posttest score for the 1977-78 analyses, the spring 1979 score, served as the posttest for the 1978-79 and 1977-79[1] analyses.

Two options were available for the pretest score to be used:

- The appropriate previous spring score, i.e., spring 1977 for the 1977-78 analyses and the 1977-79 analysis, spring 1978 for the 1978-79 analyses.
- The appropriate previous fall score, i.e., fall 1977 for the 1977-78 analyses and the 1977-79 analysis, fall 1978 for the 1978-79 analyses.

A decision was made to use the appropriate previous spring score, when possible, as the covariate. The appropriate previous fall score was used when the spring score was not available. Each of these cases is noted on the applicable tables. The spring score was chosen as the covariate because, in general, it was more highly correlated with the posttest score and, therefore, provided a greater adjustment for initial differences. In addition, since the pretest was administered at the same time of year as the posttest, the difference between the mean pretest and mean posttest provided a better measure of growth than changes from fall to spring.

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[1] The "below mean" analyses were not done for 1977-79 because the sample sizes were too small to provide useful results.

## Impact Analysis

The primary purposes of the evaluation of the Special Emphasis Project were to:

- Determine the impact on reading performance of students in the Special Emphasis and comparison schools during each school year and over the length of the study.
- Determine differences in the retention of reading skills between schools with and without summer reading programs.
- Determine the impact of the Special Emphasis Program on reading-related attitudes and behaviors of school staff, students, and parents.
- Document the residual effects of the Special Emphasis Project within each participating school district and on project participants.

Selected students in the Special Emphasis school were to receive the Special Emphasis treatment; students in the comparison school, who were, at the beginning of the project, presumed to be similar to the students in the Special Emphasis school, did not receive the Special Emphasis treatment. The treatment was actually two distinct treatments:

- The school year program in which all students, grades 1 and 2 participated and students, grades 3 through 6 participated if selected by the school staff, the selection criteria being based on policy established at each site.

- The summer program in which students volunteered to participate.

With the concurrence of USOE, the project team decided to:

- Consider each project site as a separate evaluation.
- Examine reading performance for each grade separately.
- Delete from the evaluation the investigation of summer program impact. A discussion of the issues related to this decision is presented in Section 3, Evaluation Design and Methodology.

The analyses performed in this study were conducted through:

- Covariance analyses of whole grade cohort groups for project years 1977-78 and 1978-79 and for the study period 1977-79.
- Covariance analyses of below mean cohort groups for project years 1977-78 and 1978-79.
- Trend analysis of students reading 1 or more years below grade level for the study period 1977-79.

### Covariance Analyses of Whole Grade Cohort Groups

ANCOVA was used to compare students in each grade in each Special Emphasis school with their cohort group in the comparison school. Whole grade cohort groups consisted of all students within each grade, at each school, for whom both pre- and posttest scores were available. The use of ANCOVA permits the analysis of "the performance of several groups which are unequal with regard to an important variable as though they were equal in this respect."[1] For this study, ANCOVA permitted comparison of Special Emphasis and comparison groups with pre-existing differences in pretest scores as though they were equal. The posttest "comprehension total" scaled score was used as the dependent variable in the statistical procedure. For project year 1977-78, the spring 1978 score represented the posttest. For project year 1978-79 and for the 1977-79 analyses, the spring 1979 score represented the posttest. The posttest score was statistically adjusted for any initial differences that existed in the Special Emphasis and comparison cohorts in terms of the pretest "comprehension total" scaled score, called the covariate. For the 1977-78 and the 1977-79 analysis, the covariate was the spring 1977 score. For the 1978-79 analysis, the spring 1978 score was used as the covariate. In a few cases when the spring 1977 or spring 1978 score was not available, e.g., for California for the 1977-78 analysis, the preceding fall score was substituted as the covariate. These instances are all noted where applicable.

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[1] W. J. Popham and K. A. Sirotnik, Educational Statistics: Use and Interpretation, New York, Harper & Row, Publishers, 1973, p. 205.

Appendix E contains summaries of the covariance analyses for each site for each of the specified periods. One example follows on Table G.8. The table identifies:

- The number of students in each of the analytic samples.
- The mean pretest "comprehension total" scaled score for students in each analytic sample--i.e., the covariate.
- The unadjusted posttest "comprehension total" scaled score for students in each analytic sample.
- The adjusted mean posttest "comprehension total" scaled score.
- The F value resulting from the calculation of the ANCOVA.
- The level of significance of the F value which is dependent on the number of degrees of freedom. For this study, a value of .05 or less indicates that the difference in adjusted posttest achievement between the Special Emphasis and comparison cohorts is statistically significant.

## TABLE G.8

## IMPACT SUMMARY FOR PROJECT YEAR 1978-79
## WHOLE GRADE

DEPENDENT VARIABLE: SDRT Comprehension Total Posttest Scaled Score

INDEPENDENT VARIABLE: Treatment

COVARIATE: SDRT Comprehension Total Pretest Scaled Score

Site: LOUISIANA

| ANCOVA | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Treatment | No. of Students | Mean Pretest Scaled Score | Unadjusted Mean Posttest Scaled Score | Adjusted Mean Posttest Scaled Score | F Value | Significance of F | Grade Equivalent of Mean Pretest | Grade Equivalent of Mean Posttest | Change in Grade Equivalent |
| 2 | Special Emphasis | 27 | 258 | 346 C | 372 | 4.19 | 0.04 | 1.5 | 2.4 | + .9 |
| | Comparison | 90 | 311 | 364 C | 357 | | | 2.0 | 2.6 | + .6 |
| 3 | Special Emphasis | 34 | 343 C | 421 | 437 | 0.09 | 0.76 | 2.4 | 3.3 | + .9 |
| | Comparison | 64 | 370 C | 448 C | 440 | | | 2.6 | 3.8 | +1.2 |
| 4 | Special Emphasis | 30 | 428 | 465 C | 477 | 0.00 | 0.93 | 3.4 | 4.3 | + .9 |
| | Comparison | 70 | 446 C | 481 C | 476 | | | 3.8 | 4.7 | + .9 |
| 5 | Special Emphasis | 33 | 457 C | 490 | 494 | 6.78 | 0.01 | 4.1 | 5.0 | + .9 |
| | Comparison | 70 | 461 C | 464 | 464 | | | 4.2 | 4.3 | + .1 |
| 6 | Special Emphasis | 46 | 495 | 540 | 529 | 1.97 | 0.16 | 5.1 | 6.6 | +1.5 |
| | Comparison | 71 | 478 | 507 | 514 | | | 4.6 | 5.5 | + .9 |

C indicates that corresponding mean raw score above 70% correct (ceiling).

The 'C' following the mean pretest or posttest scores indicates that there was evidence of serious ceiling effects derived from the corresponding mean raw score for the designated analytic sample.

Table G.8 also summarizes reading performance in terms of grade equivalents for each analytic sample. The mean pretest and unadjusted posttest scaled scores were converted to appropriate grade equivalents and the mean observed change was calculated. While this analysis can result in a built-in bias in favor of the initially low-scoring group,[1] it is presented as an extension of the covariance analyses to provide a yardstick to measure growth against expectations with respect to national norms. Where the results of the ANCOVA are statistically significant, e.g., for grade 5 on Table G.8, the grade equivalent analysis provides a measure of educational significance. For grade 5, for example, the Special Emphasis group pretest score was below the comparison group, but their posttest score was higher than the comparison group. In terms of grade equivalents, the Special Emphasis group gained .9 year's growth. In both cases, there were serious ceiling effects on the pretest so that the growth rates are overestimates of the true rate.

It has been common practice in education to expect a 1 month growth rate for each month a student attends school, resulting in an expected growth rate of .0 grade equivalent over the course of a school year. Dr. Bjorn Karlsen, an author of the SDRT, has noted that this expectation is unrealistic for all students.[2] He presents evidence that for students scoring below the 25th percentile with respect to the national norms, an average growth of .6 to .7 of a grade equivalent per school year would be a more reasonable expectation. Therefore, while it may appear that low-scoring groups are losing ground with respect to normal expectations, a program may produce educationally significant results with growth rates of less than 1.0 grade equivalent per school year for students in the lowest quartile.

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[1] F. M. Lord, "Elementary Models for Measuring Change," in Problems in Measuring Change (C. W. Harris, ed.). Madison, University of Wisconsin Press, 1967, p. 37.

[2] B. Karlsen, "Accountability - A Year's Growth in a Year?," The California Reader, Vol. 5, No. 1, January, 1972.

## Covariance Analyses of Below Mean Cohort Groups

The covariance analyses for the below mean cohort groups is similar to that for the whole grade cohort groups. The analytic samples, though, are subsets of the whole grade groups. These subsets consist of only those students who had a pretest "comprehension total" scaled score below the mean pretest score for the whole grade group.

Several hazards are associated with the use of ANCOVA for below mean cohort groups. These are listed below and readers are advised to consider these limitations when reviewing the analytical results presented in Section 5 of this report.

- The proportion of students scoring below the grade mean in Special Emphasis and comparison groups may not be equal.
- The below mean cohort group for both Special Emphasis and comparison groups exhibit a preponderance of negative measurement error at the low end of the distribution.

Appendix F contains summaries for each site of the covariance analyses of below mean cohort groups for project years 1977-78 and 1978-79. The below mean analyses for 1977-79 were not done because sample sizes were too small to provide useful results. The tables are in the same format as the tables in Appendix E. The importance of these analyses is that they address impact for those students for whom the Special Emphasis treatment was intended and avoids the problems related to ceiling effects since the students likely to have encountered the test ceiling are not included in the below mean groups.

For the below mean group of students, this study will consider the average expected growth rate in terms of grade equivalent to be .6 years.

## Trend Analyses for Students Reading 1 or More Years Below Grade Level

A second approach taken to investigate the impact of Special Emphasis on the students for whom the Special Emphasis Program had been intended to serve was based on an examination of trends in the percentage of students who, over the period from the spring 1977 to the spring of 1979 were reading at a grade equivalent level 1 or more years below grade level on the referent year's spring pretest. Students were included in this group if their grade equivalent score was 1.0 years below "normal expectation." For example, a third grade student would be included in this group if his/her grade equivalent score for the spring testing was 2.9 or less at the end of the third grade since the student would be expected to have grade equivalent score of 3.9.

Frequencies were tabulated for each spring testing of:

- The number of students tested for each grade.
- The number of students reading 1 or more years below grade level for each grade.

From these data, the percent of students reading 1 or more years below grade level was calculated. These data are contained in tables for each site in Appendix D. An example for one site follows on Tables G.9 to G.11. From Table G.9, it can be seen that overall 45% of the students tested in spring 1977 in the Special Emphasis school were reading more than 1 year below grade level. Additional data is also presented on Table 3.9 so that trends regarding individual students can be examined. For example, for the fourth grade at the Special Emphasis school, 53 students were tested in spring 1977, 27, or 51%, of whom were reading more than 1 year below grade level. Of the 53 students tested in spring 1977, 46 were tested in spring 1978--4 of whom had been retained in the fourth grade and 42 of whom had advanced to the fifth grade. Of the 42 students who had advanced to the fifth grade, 20, or 48%, had been 1 or more years below grade level at the end of fourth grade. Twenty-eight, or 67%, were 1 or more years below grade level at the end of fifth grade. Of the 20 who were below grade

## TABLE G.9

## FREQUENCY ANALYSIS OF STUDENTS MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION

Project Year 1977-78

Site: TENNESSEE
School: Special Emphasis

| SPRING 1977 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 44 | N/A | N/A |
| 2 | 49 | 15 | 31% |
| 3 | 35 | 15 | 43% |
| 4 | 53 | 27 | 51% |
| 5 | 56 | 36 | 64% |
| 6 | 77 | 48 | 62% |
| TOTAL | 314 | 141 | 45% |

| SPRING 1977 TO SPRING 1978 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 77 | Grade Spr 78 | Total students tested at both points | No. >1 yr below grade Spr 77 | No. >1 yr below grade Spr 78 | No. >1 yr below grade at both points |
| 1 | 1 | 2 | N/A | N/A | N/A |
| 1 | 2 | 33 | N/A | 5 | N/A |
| 2 | 3 | 40 | 10 | 9 | 8 |
| 3 | 3 | 1 | 1 | 0 | 0 |
| 3 | 4 | 27 | 11 | 16 | 10 |
| 4 | 4 | 4 | 4 | 2 | 2 |
| 4 | 5 | 42 | 20 | 28 | 18 |
| 5 | 5 | 3 | 3 | 3 | 3 |
| 5 | 6 | 42 | 24 | 26 | 23 |
| 6 | 6 | 5 | 5 | 5 | 5 |
| | | | | | |

Project Year 1977-78

Site: TENNESSEE
School: Comparison

| SPRING 1977 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 32 | N/A | N/A |
| 2 | 31 | 1 | 3% |
| 3 | 19 | 8 | 42% |
| 4 | 24 | 11 | 46% |
| 5 | 22 | 16 | 73% |
| 6 | 33 | 18 | 55% |
| TOTAL | 161 | 54 | 34% |

| SPRING 1977 TO SPRING 1978 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 77 | Grade Spr 78 | Total students tested at both points | No. >1 yr below grade Spr 77 | No. >1 yr below grade Spr 78 | No. >1 yr below grade at both points |
| 1 | 1 | 4 | N/A | N/A | N/A |
| 1 | 2 | 22 | N/A | 2 | N/A |
| 2 | 2 | 1 | 0 | 0 | 0 |
| 2 | 3 | 21 | 0 | 0 | 0 |
| 3 | 3 | 2 | 2 | 0 | 0 |
| 3 | 4 | 13 | 3 | 2 | 1 |
| 4 | 4 | 3 | 3 | 1 | 1 |
| 4 | 5 | 14 | 4 | 7 | 4 |
| 5 | 6 | 15 | 13 | 12 | 12 |
| 6 | 6 | 1 | 1 | 0 | 0 |
| | | | | | |

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## TABLE G.10

## FREQUENCY ANALYSIS OF STUDENTS MORE THAN I YEAR BELOW GRADE LEVEL IN READING CONPREHENSION

Project Year 1978-79

Site: TENNESSEE
School: Special Emphasis

| SPRING 1978 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 45 | N/A | N/A |
| 2 | 43 | 6 | 14% |
| 3 | 50 | 10 | 20% |
| 4 | 34 | 18 | 53% |
| 5 | 52 | 33 | 64% |
| 6 | 55 | 36 | 66% |
| TOTAL | 279 | 103 | 37% |

| SPRING 1978 TO SPRING 1979 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 78 | Grade Spr 79 | Total students tested at both points | No. >1 yr below grade Spr 78 | No. >1 yr below grade Spr 79 | No. >1 yr below grade at both points |
| 1 | 1 | 1 | N/A | N/A | N/A |
| 1 | 2 | 34 | N/A | 0 | N/A |
| 2 | 2 | 2 | 2 | 0 | 0 |
| 2 | 3 | 31 | 3 | 4 | 1 |
| 3 | 3 | 3 | 4 | 3 | 3 |
| 3 | 4 | 37 | 2 | 7 | 2 |
| 4 | 4 | 3 | 3 | 2 | 2 |
| 4 | 5 | 23 | 12 | 16 | 9 |
| 5 | 5 | 3 | 3 | 3 | 3 |
| 5 | 6 | 14 | 6 | 5 | 5 |
| 6 | 6 | 3 | 3 | 3 | 3 |
| | | | | | |

Project Year 1978-79

Site: TENNESSEE
School: Comparison

| SPRING 1978 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 38 | N/A | N/A |
| 2 | 27 | 2 | 7% |
| 3 | 28 | 1 | 4% |
| 4 | 22 | 4 | 17% |
| 5 | 17 | 10 | 59% |
| 6 | 24 | 14 | 58% |
| TOTAL | 157 | 31 | 20% |

| SPRING 1978 TO SPRING 1979 | | | | | |
|---|---|---|---|---|---|
| Grade Spr 78 | Grade Spr 79 | Total students tested at both points | No. >1 yr below grade Spr 78 | No. >1 yr below grade Spr 79 | No. >1 yr below grade at both points |
| 1 | 1 | 5 | N/A | N/A | N/A |
| 1 | 2 | 17 | N/A | 0 | N/A |
| 2 | 3 | 20 | 1 | 2 | 1 |
| 3 | 3 | 1 | 0 | 0 | 0 |
| 3 | 4 | 23 | 1 | 5 | 1 |
| 4 | 5 | 21 | 3 | 8 | 3 |
| 5 | 6 | 18 | 11 | 9 | 9 |
| N/A | | N/A | N/A | N/A | N/A |
| | | | | | |

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## TABLE G.11

## FREQUENCY ANALYSIS OF STUDENTS READING MORE THAN 1 YEAR BELOW GRADE LEVEL IN READING COMPREHENSION 1979

**Site:** TENNESSEE
**School:** Special Emphasis

| SPRING 1979 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 38 | N/A | N/A |
| 2 | 42 | 0 | 0 |
| 3 | 43 | 7 | 16% |
| 4 | 54 | 11 | 20% |
| 5 | 33 | 20 | 60% |
| 6 | 20 | 9 | 45% |
| TOTAL | 230 | 47 | 20% |

**Site:** TENNESSEE
**School:** Comparison

| SPRING 1979 | | | |
|---|---|---|---|
| Grade | Total students tested | No. >1 yr below grade | % of total >1 yr below grade |
| 1 | 36 | N/A | N/A |
| 2 | 20 | 0 | 0 |
| 3 | 25 | 2 | 8% |
| 4 | 29 | 6 | 21% |
| 5 | 29 | 13 | 45% |
| 6 | 22 | 11 | 50% |
| TOTAL | 161 | 32 | 20% |

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level initially, 18, or 90%, remained 1 or more years below grade level. In addition, 10 students who had not been more than 1 year below grade level at the end of the fourth grade were more than 1 year below grade level at the end of the fifth grade. Table G.10 shows that for all fifth grade students tested in spring 1978, 33, or 64% were 1 or more years below grade level. Of those 33 students, however, only 27%, 9 students, were also tested in spring 1979. The drop in the percent of sixth grade students reading more than 1 year below grade level in spring 1979 to 45% (see Table G.11) appears to be due to sample attrition rather than a function of program participation.

Other Outcomes

In addition to examination of program impact on student reading achievement levels, GRC investigated the possibility of outcomes related to:

- Changes in attitudes and/or behaviors of school, staff, students, and parents.
- Residual effects of the Special Emphasis Project within the participating school districts and schools and on the project participants, i.e., school staff, students, and parents.

Each of these types of outcomes is described in the following discussion.

Changes in Attitudes and/or Behaviors. Responses from teachers, students, and parents were examined from each site and school for both the 1977-78 and the 1978-79 project years. Teacher perceptions were tabulated regarding:

- Attitudes of students, teachers, and the principal.
- Reading behaviors of students.
- Problems resulting from involvement in the Special Emphasis Project.

Comparisons were made between responses for the project years to determine whether teachers' perceptions of changes in (1) the principal's attitude toward the reading program, (2) the students' attitudes toward reading, or (3) the teachers' attitudes toward reading instruction had changed. Similar comparisons were made regarding teachers' perceptions of changes [illegible] students' behaviors in (1) the time spent reading in class, (2) the time spent reading outside class, and (3) library and/or classroom book usage.

For each project year, teachers were asked to categorize potential problem areas, resulting from Special Emphasis as a major problem, a minor problem, or not a problem. The types of problems listed on the teacher questionnaires differed for teachers in the Special Emphasis school and teachers in the comparison school. The tabulated responses for each school for each year were compared to examine whether teachers' perceptions of the magnitude of the problem had changed during the course of the study.

Responses to the student survey instruments (grade 3 and grades 4 through 6) were tabulated and analyzed. Comparisons were made between the proportion of third grade students in the Special Emphasis school and third grade students in the comparison school who responded that (1) reading was fun, (2) they read during their free time, (3) they enjoyed reading in class, and (4) they read only when they had to. Similar comparisons were made for fourth through sixth grade student responses on (1) whether they liked to read, (2) whether the students thought they read better than the previous year, (3) the amount of time spent reading outside of school, and (4) the number of books read in the past month.

Responses from the Parent Questionnaires were tabulated for each project year by site and school. Comparisons were made between the proportion of parents of Special Emphasis school students and parents of comparison school students who responded regarding whether (1) their child shared books that he/she read with other family members, (2) the school set up parent-teacher conferences to explain their child's strengths or weaknesses in reading, and (3) they had worked as a volunteer in the child's school during the project year.

Residual Effects of Special Emphasis. During the close-out interviews conducted during the fall 1979 site visits, GRC attempted to identify any residual effects of Special Emphasis in the policies, procedures, or practices of the school district as a whole or within the treatment school. Additionally, information was sought on whether the project site had considered the project a success in meeting their own objectives. Project staff were also queried about perceived changes in staff, students, and parents at the Special Emphasis school which would extend beyond the study conclusion.

Complete results of the impact analysis of the Special Emphasis Projects are presented in Section 5.

# APPENDIX H

# GLOSSARY

# GLOSSARY

The following list contains technical terms used in this final report on the Evaluation of Special Emphasis and the meaning given to each by the authors of this report.

| | |
|---|---|
| Analysis of Covariance (ANCOVA) | A statistical technique used to test for differences among two or more groups while statistically controlling for group differences on variable(s) which are relevant to the criterion (dependent) variable. |
| Basal | A basic reading textbook which, in addition to readings, may indicate skill exercises and a management system to aid the teacher in tracking skill development. |
| Ceiling Effect | The situation in which the test was so easy that the student was able to answer all or almost all the questions correctly. |
| Confounding | The presence of factors in an experiment which disturbs or "clouds" the determination of the cause and effect relationship between treatment and outcomes. |
| Diagnostic-Prescriptive | A teaching approach which, by use of a testing instrument, first assesses the student's strengths and weaknesses on specific skills and then adapts the content and/or modalities of instruction to fit the individual student. |
| DISTAR | A commercially available set of materials for reading instruction which provides highly structured exercises for developing reading skills. |
| Downshifting | See Out-of-Level Testing |

| | |
|---|---|
| ESAA | The Emergency School Assistance Act which provides special funding to school districts for local programs designed to assist in desegregation and overcome the educational disadvantages associated with minority-group isolation. |
| Experimental Contamination | The presence of unintended influences on an experiment which disturbs or "clouds" measurement of the cause and effect relationship. |
| Flexible | A classroom management style of teachers who tend to value a learning environment which promotes spontaneity, student choice of activities and groups, student initiated learning objectives, and student assessment of activities. |
| Floor Effect | The situation in which the test was too difficult for the student resulting in a score at or below the chance level. |
| Hawthorne Effect | A type of experimental contamination in which the participants in an experiment behave differently not as an effect of the treatment but because they are aware of being observed. |
| John Henry Effect | A type of experimental contamination in which a comparison group, like the legendary John Henry, attempts to work harder to overcome its competitor's advantage of additional resources. |
| Joplin Plan | An instructional plan for elementary schools which allows teachers to specialize in one subject area as opposed to the traditional self-contained classroom in which one teacher teaches multiple subjects. |

| | |
|---|---|
| Low Achieving | For purposes of this study, a student whose expected level of progress on a standardized reading test--all other things being equal--is .6 years grade equivalent rather than the 1 year progress expected of the typical student. |
| Out-of-Level Testing | The use of a test level below the one recommended for the student's grade level. |
| Placebo | Literally, a "satisfier." In an experimental situation, a pseudo treatment (such as an inert pill) which leads the comparison or control group members to believe that they are also receiving the treatment. |
| Precision Teaching | A reading management system employed in the Louisiana site's Title I program which utilizes a machine-scored tracking of student performance on 500 reading subskills. |
| Raw Score | The number of questions the student answered correctly on a test. |
| Reading Specialist | An individual with a master's degree with a major or specialty in reading from an accredited institution of higher education, and has successfully completed 3 years of teaching experience, which includes reading instruction. |
| Reading Teacher | An individual with a bachelor's degree who has successfully completed a minimum of 12 credit hours or the equivalent in courses of teaching reading at an accredited institution of higher education, and has successfully completed 2 years of teaching experience which includes reading instruction. |
| Scaled score | Performance on a single scale which cuts across test times and test levels. |

| | |
|---|---|
| Stanford Diagnostic Reading Test (SDRT) | The reading test used in the Evaluation of Special Emphasis to measure change in reading skills. |
| Structured | A classroom management style of teachers who tend to value controls over the learning situation such as specified assignments, keeping students within their sight, having rules for talking aloud, allocation of space for specific activities, and rules for a student's movement within the classroom. |
| Title I | The section of the Elementary Secondary Education Act (ESEA) which provides funding for compensatory instruction for socially and economically disadvantaged students. |
| Wisconsin Design | A reading management system used in the West Virginia site which provides highly structured exercises for developing reading skills. |